



# WIEGAND REGISTRATION READER

## Wiegand Registration Reader INSTALLATION MANUAL

### SPECIFICATIONS

<b>Read Capability</b> .....	Slim Tags, Omega Tags, Impro Trinary Tags and HID 125 kHz Tags.	
	<i>NOTE: HID is a registered trademark of HID Global Corporation (an ASSA ABLOY Group Brand).</i>	
<b>Working Environment</b> .....	Designed to work in indoor or outdoor environments similar to IP42. The Wiegand Registration Reader is, therefore, not sealed against water.	
<b>Input Voltage</b> .....	5 V DC, polarity sensitive.	
<b>Power Requirements</b>	<b>Current (mA)</b>	<b>Power (W)</b>
Supply voltage 5 V DC all indicators on.....	50	0.35
<b>Wiegand Bus</b>		
Electrical Interface.....	'0' and '1' Data streams.	
Data Format .....	44-bit or 26-bit Wiegand.	
<b>Buzzer</b> .....	4 kHz piezo-electric single volume, single tone.	
<b>Status Indicators</b>		
Status LED .....	Tri-coloured Red, Green or Amber (externally visible).	

### INSTALLATION INFORMATION

#### Accessories

Find the following when unpacking the Wiegand Registration Reader:

- A Wiegand Registration Reader housed in a Natural, Anodised, Aluminium extruded Cabinet. The Wiegand Registration Reader consists of a Front Cover, a Base Frame and two Side Plates (the assembly includes 2 m (7 ft) of flat, 4-core Cable).

- One 2-Way Programming Pin.
- An extra Serial Number Label.

## General

Remember the following when installing the Wiegand Registration Readers:

### Distance between the Registration Interface and Wiegand Registration Reader

Install the Wiegand Registration Reader no further than 2 m (7 ft) from the Registration Interface. The cable individual conductor cross-sectional area should not be less than 0.2 mm<sup>2</sup> (0.0003 in<sup>2</sup>).

### Distance between Wiegand Registration Readers

To avoid mutual interference, install the Wiegand Registration Readers no closer than 500 mm (20 in) apart.

## Mounting the Wiegand Registration Readers

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**CAUTION:** Make certain that you place the Registration Reader on a vibration-free surface.

**CAUTION:** DO NOT place the Wiegand Registration Reader within 500 mm (20 in) of the PC Monitor or any other 125 kHz device. Doing so, may reduce the reading range of the Wiegand Registration Reader.

**CAUTION:** The Wiegand Registration Reader MUST be located in the same room as the Registration Interface to which it is connected.

*NOTE: It is not necessary to attach the Wiegand Registration Reader to a building; therefore no mounting information appears in this Installation Manual.*

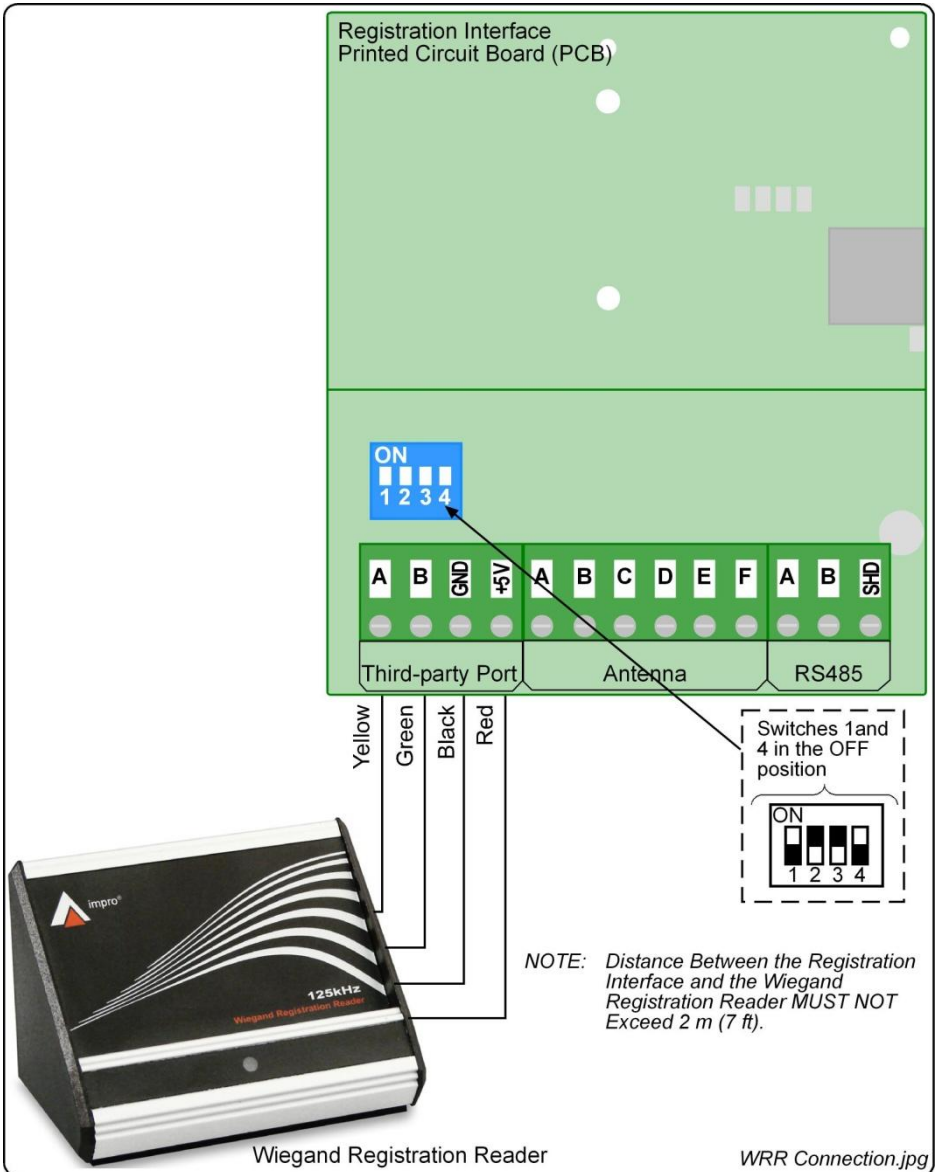
1. Connect the Wiegand Registration Reader as shown in Figure 1.
2. Place the Wiegand Registration Reader in a convenient location near the Host PC.

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# ELECTRICAL CONNECTIONS

## Connecting the Wiegand Registration Reader

Figure 1 shows typical connections for the Wiegand Registration Reader.

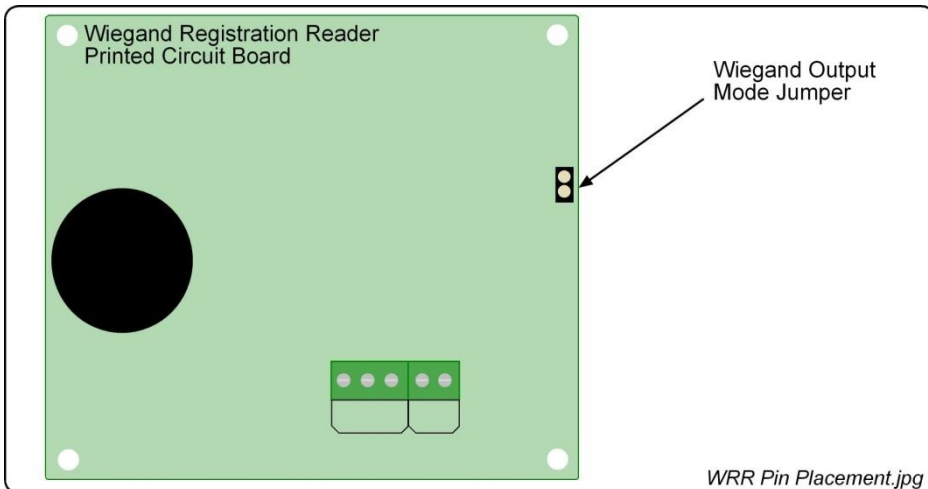


**Figure 1: Wiegand Registration Reader Connected to the Registration Interface (ImproX RS or ImproX RH)**

**NOTE:** On powering up, the Wiegand Registration Reader will produce a number of beeps corresponding to the Output Mode selected (see 'Setting the Wiegand Mode' for details) and the Status LED will illuminate solid Red.

The Wiegand Registration Reader will not read Tags until configured in the Software. Details of these procedures are located in the IXP220, IXP300 and IXP400 Software Manuals.

## Setting the Wiegand Mode



**Figure 2: Wiegand Pin Placement**

The Wiegand Readers offer four different Output Mode Combinations. Select the Output Mode by doing the following:

1. With the rear of the Registration Reader facing you, remove the right plastic Side Plate.
2. Partially slide the Printed Circuit Board out of the Housing.
3. Locate and bridge the Wiegand Output Mode Jumper using the 2-Way Programming Pin supplied.
4. Power up the unit, the number of beeps on start-up indicates the selected Output Mode:
  - Mode 1 (1 Beep): 26-bit, HID Normal.
  - Mode 2 (2 Beeps): 44-bit, HID Normal (Default).
  - Mode 3 (3 Beeps): 26-bit, HID Raw.
  - Mode 4 (4 Beeps): 44-bit, HID Raw.

**NOTE:** The 26-bit and the 44-bit refer to the output format of EMM and Impro Trinary Tags. HID Tags output in either normal or 45-bit raw mode.

5. Remove the 2-Way Programming Pin once the mode is selected.
6. Slide the Printed Circuit Board back into the Housing.
7. Replace the plastic Side Plate.

## **Wiegand 44-bit Protocol**

Tags are reported using Wiegand 44-bit Protocol. An “EMM” Tag has an 8-bit User Code and a 32-bit Serial Number.

These are reported as follows:

- The 8-bit User Code is reported in bits 1 to 8 of the Protocol.
- The 32-bit Serial Number is reported in bits 9 to 40 of the Protocol.
- Bits 41 to 44 of the Protocol are the exclusive OR of the preceding 40 bits taken 4 at a time.

## **Wiegand 26-bit Protocol**

Tags are reported using Wiegand 26-bit Protocol.

The following format is used:

- Bit 1 is the even parity over the first 13 bits.
- Bits 2-25 are the least significant 24 bits of the Tag Code.
- Bit 26 is the odd parity over the last 13 bits.

## **HID Normal**

The number of bits to output is determined from the information in the Tag and will vary between Tags. The 26-bit or 44-bit selection does not impact on HID Tags.

## **HID Raw**

In this Mode, the entire raw 45-bit HID Tag is output.

## **Serial Number Label**

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The loose Serial Number Label (packaged with the Remote Reader) identifies the type of Remote Reader and its Serial Number.

## **GUARANTEE OR WARRANTY**

This product conforms to our Guarantee or Warranty details placed on our Web Site, to read further please go to [www.impro.net](http://www.impro.net).

## **USER NOTES**

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This manual is applicable to the Wiegand Registration Reader WRR900-1-0-GB-00.  
(The last two digits of the Impro stock code indicate the issue status of the product).

WRR300-0-0-GB-04

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