

IDTECK SRK101RW

PIN & 13.56MHz [MIFARE]

Contactless Smart Card Reader / Writer



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1. Important Safety Instructions

When using your **PIN & 13.56MHz [MIFARE] Contactless Smart Card Reader / Writer**, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons. In addition, the following should also be followed:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. **Do not** use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
If necessary, use mild soap.
4. **Do not** use this product near water, such as bath-tub, wash bowl, kitchen sink, laundry tub, in a wet basement, or swimming pool.
5. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your installation site, consult your dealer or local power company.
6. **Never** push objects of any kind into this product or through the cabinet slots as they may touch voltage points or short out parts that could result in fire or electric shock. Never spill liquid of any kind on the product.
7. To reduce the risk of electric shock, do not disassemble this product by yourself, but take it to qualified service whenever service or repair is required. Opening or removing the covers may expose you to dangerous voltages or other risks. Also, incorrect reassembly can cause electric shock when the unit is subsequently used.
8. **Unplug** this product from the Direct Current (DC) power source and refer to qualified service personnel under these conditions:
 - a. When the power supply cord or plug is damaged or frayed.
 - b. If liquid has been spilled on the product.
 - c. If the product does not operate normally after following the operating instructions in this manual. Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls that are not covered by this manual may damage the unit and will often require extensive work by a qualified technician to restore normal operation.
 - d. If the product exhibits a distinct change in performance.

2. General

The **IDTECK SRK101RW Smart Card Reader / Writer** can be compatible with **Philips Mifare™ Card**. The unit provides integrated operation of reader and writer and is designed by which can install easily to door frame or wall. The **IDTECK SRK101RW** is elegant looking and built in an attractive 10cm (4") read range smart card reader with keypad. The **IDTECK SRK101RW** has back lighting on the keypad that ensures you successful operation even the night operating.

It also reads serial numbers from **Philips Mifare™ Cards** compatible, and can read and write special data of memory field internal card when operating of the unit is set by PRG2000.

The **IDTECK SRK101RW** can support communication between PRG2000, PC and third party controller using methods of RS232 and RS485. Three LEDs of green, yellow and red, inside Piezo buzzer sound will guarantee you an accurate and reliable system operations.

3. Features

- 13.56MHz [Mifare] Contactless Smart Card & PIN Reader and Writer
- Read Range: Up to 4inch (10cm)
- RS232 / RS485 (Default), 26 / 34bit Wiegand (Selectable) Output Format
- 4 / 8bit Burst for PIN Output Format Selectable
- 12 Numeric Keypads with Back Lighting
- External LED Control
- External Buzzer Control
- Tamper Switch
- Wall Mount (US, EU, Asian Gang Box Size)
- Reverse Polarity Protection
- Options:
 - 3ea of External LED Control
- Compatible Controller: (26bit Wiegand) iCON100, iTDC, Third Party Controller
(34bit Wiegand) iCON100SR, iTDC-SR, Third Party Controller

4. Identifying Supplied Parts

Please unpack and check the contents of the box.



**SRK101RW
(1ea)**



**Wall Mount
(1ea)**



**O-ring
(5ea)**



**User's Manual
(1copy)**



**3.5*40 Screw
(4ea)**



**3.5*12 Screw
(4ea)**



**Anchor Bolt
(4ea)**

5. Specification

Model		SRK101RW
Read Range		ISK50 / IMC135 / IHC80: Up to 2 inch (5cm) ISC80: Up to 4 inch (10cm)
Reading Time (Card)		30ms
Power / Current		DC12V / Max.150mA
Input Port	Default	1ea of External LED Control, 1ea of External Buzzer Control
	Optional	3ea of External LED Control, 1ea of External Buzzer Control
Output Format		RS232 / RS485 (Default) / 26 / 34bit Wiegand (Selectable) / 4/8bit Burst for PIN (Selectable)
Keypad		12 Key Numeric Keypad with Back Lighting
LED Indicator		3 Array LED Indicators (Red, Green and Yellow)
Beeper		Piezo Buzzer
Operating Temperature		-35° to +65°C (-31°F to +149°F)
Operating Humidity		10% to 90% relative humidity non-condensing
Color		Dark Pearl Gray
Material		Polycarbonate
Dimension (W x H x T)		87mm x 100mm x 31mm (3.4" x 3.94" x 1.22")
Weight		190g (0.42lbs)
Certification		FCC, CE, MIC

[Card reading range by Contactless Smart[Mifare] Reader Series]

Model		ISC80	ISK50	IMC135	IHC80
Read Range	SR10 / SR30 / SRK101	4 inch (10cm)	2 inch (5cm)		
	SR10B / SR30B / SRK101B	4 inch (10cm)	2 inch (5cm)		
	SR10RW / SR30RW / SRK101RW	4 inch (10cm)	2 inch (5cm)		
	FINGER007SR(B) FINGER006SR(B) FGR006SR(B)	4 inch (10cm)	2 inch (5cm)		
	SR505	4 inch (10cm)	2 inch (5cm)		
	FACE007SR FACE006SR	4 inch (10cm)	2 inch (5cm)		

6. Installation

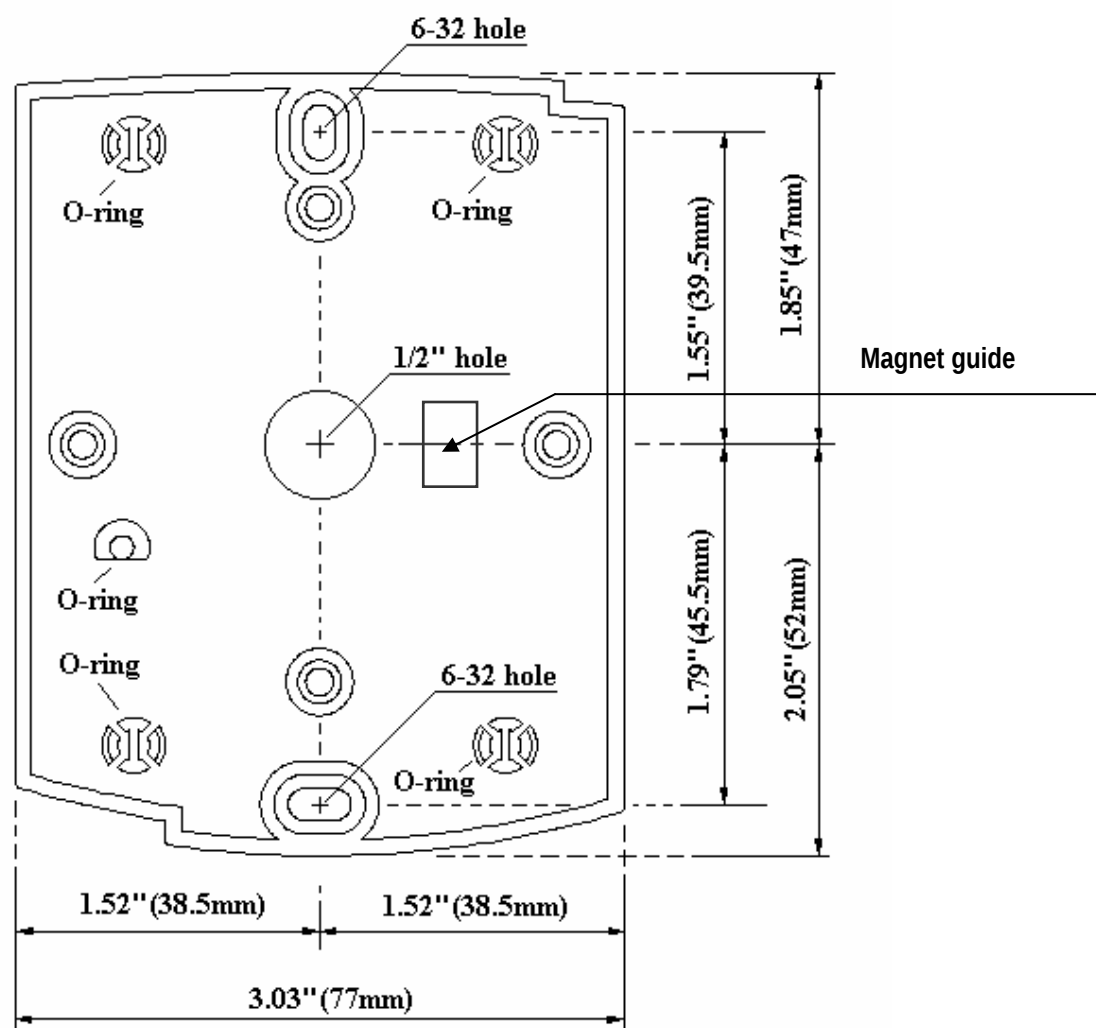
6-1. Drill two 6-32 or M3 screw holes 3.3"(8.38cm) apart in vertical and one 1/2" hole at the center of these two holes.

(If you have installed electric gang box then skip this step.)

6-2. Make sure that magnet is attached by magnet guide of wall mount.

6-3. Using two 6-32 or M3 screws, install wall mount to the wall.

6-4. Insert 5 O-rings to the wall mount as indicated, then route the cable of the main unit through the center hole and push the main unit to wall mount to lock the main unit and make sure that the main unit is locked with wall mount.



6-5. Installation consideration

6-5-1. Installation of SRK101RW on metal

Read range will be reduced if located on metal surfaces or in the vicinity of metal objects. The amount of reduction will be a factor of the amount of metal and the distance the Reader is from the metal. Metal near the Reader absorbs energy from the Reader excite field and affects the signal being received from the card by re-directing excite field transmissions into the receiver circuitry. Moving the Reader away from the metal objects reduces energy loss.

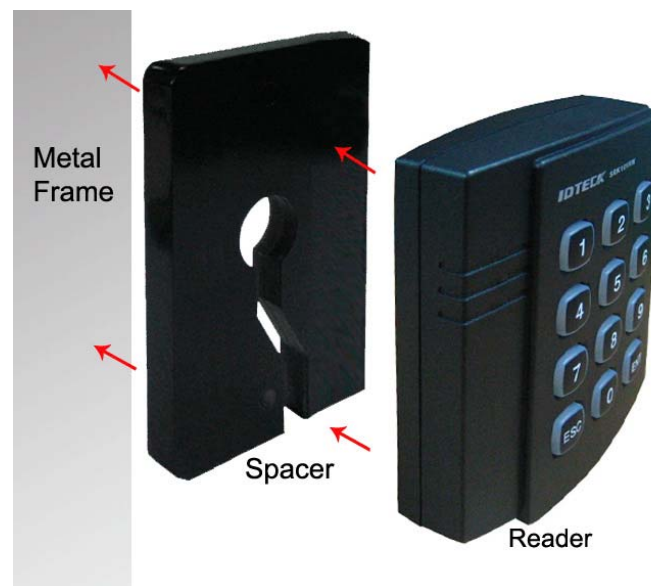
Try to limit the amount of metallic materials installed near the SRK101RW.

Use a plastic electrical box if possible.

When installing the Reader on metal door frame, add Isolation Spacers between the Reader and metal door frame. If you do so, read range reduction can be improved.

The typical read distance specification (2-4 inches at 12VDC) refers to operation without metal in the vicinity of the Reader.

The read distance will be reduced if metal is installed nearby. The SRK101RW generates a magnetic field on all sides of the Reader. Any metal that conducts electricity, especially metal that contains iron, steel or copper will interfere with the field and reduce the effective spacer between the Reader and the metal object.



① Installation of two readers side by side and back to back

Read range is not affected if the side by side distance between two readers is equal to or greater than eight inches (20cm). If the distance between the two readers is less than eight inches (20cm), field interference between the two readers may result in a double-badge read.

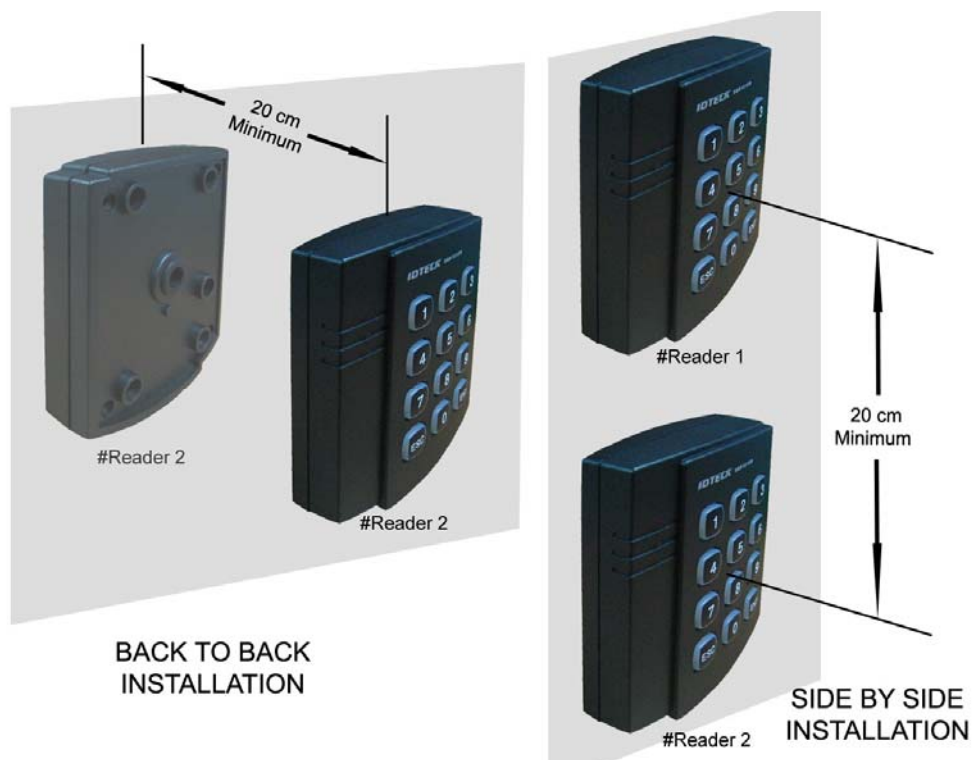
Note

Two readers can simultaneously read the same badge or tag if the distance between the two readers is less than 8 inches (20cm), back-to-back.

When installing two readers back-to-back on a wall that will separate the two readers by eight inches (20cm) or less, a metal plate (for example: Reader isolation plate, metal wall) must be placed between the readers. To obtain the maximum read range, mount each proximity reader onto one or more Isolation Spacers.

Note

Two readers can simultaneously read the same badge or tag if the distance between the two readers is less than 8 inches (20cm), side by side.



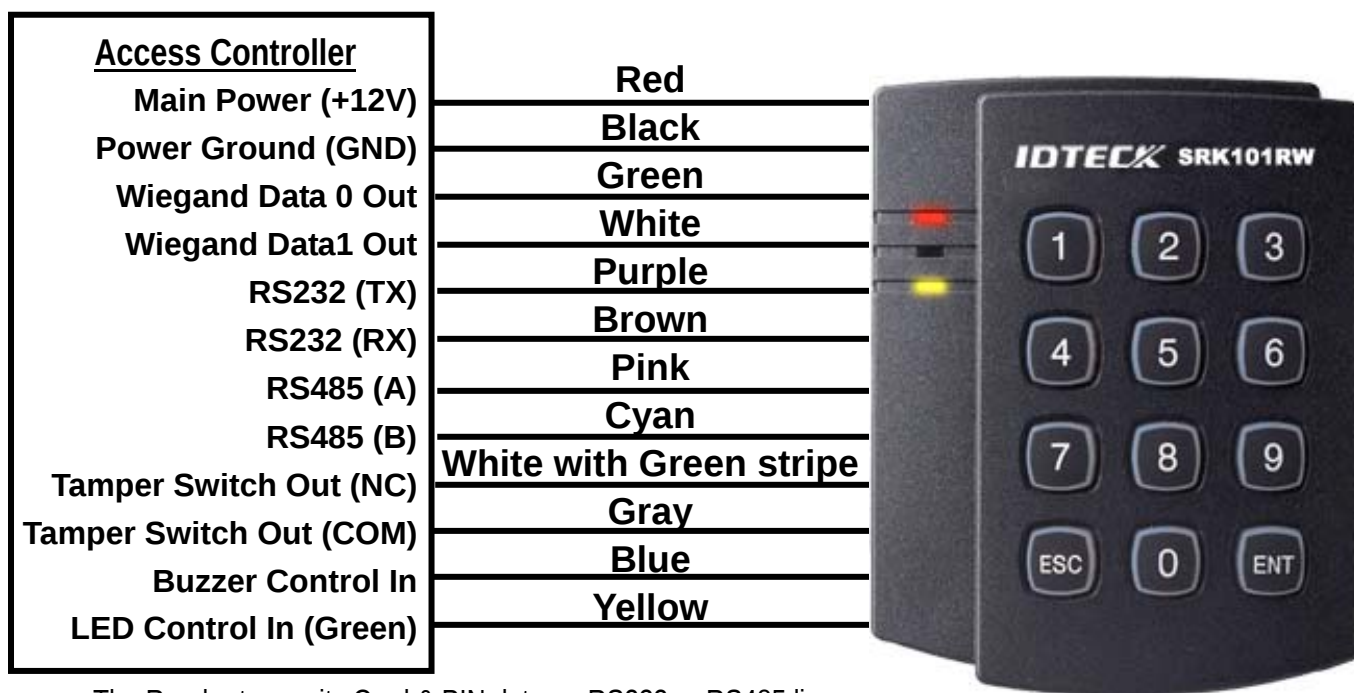
7. Wire Color Table of the Reader

SIGNAL	COLOR
Main Power (+12V)	Red
Power Ground (GND)	Black
ABA Track II CP Out	Orange
Wiegand Data 0 Out / ABA Track II Data Out	Green
Wiegand Data 1 Out / ABA Track II Clock Out	White
Buzzer Control In	Blue
LED Control In (RED)	White with Red stripe
LED Control In (GREEN)	Yellow
LED Control In (YELLOW)	White with Blue stripe
Tamper Switch Out (NC)	White and Green stripe
Tamper Switch Out (COM)	Gray
RS232 (TX)	Purple
RS232 (RX)	Brown
RS485 (A)	Pink
RS485 (B)	Cyan
* Please cut out tail connector before installation.	

8. Wire Connection to Access Controller

8-1. Wiring to control green LED (default)

Output Format: RS232 or RS485 (for Card)



- The Reader transmits Card & PIN data on RS232 or RS485 lines.

8-2. Wiring to control red, green and yellow LEDs (optional)

Output Format: RS232 or RS485 (for Card)

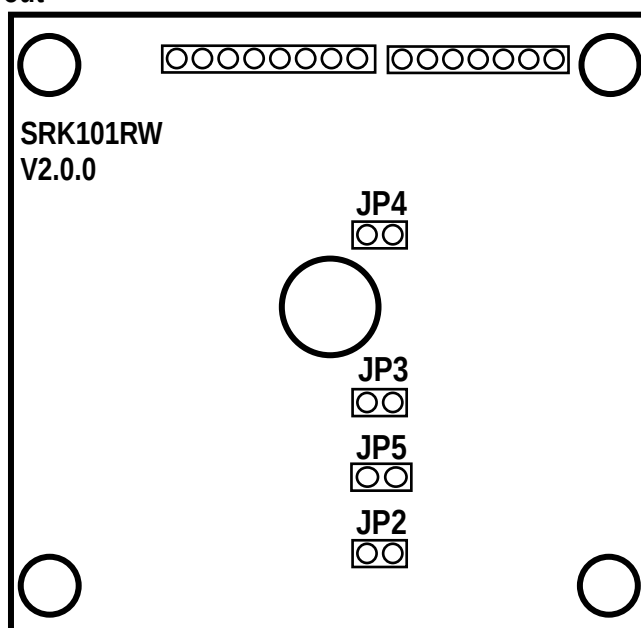
<u>Access Controller</u>	
Main Power (+12V)	Red
Power Ground (GND)	Black
Wiegand Data 0 Out	Green
Wiegand Data1 Out	White
RS232 (TX)	Purple
RS232 (RX)	Brown
RS485 (A)	Pink
RS485 (B)	Cyan
Tamper Switch Out (NC)	White with Green stripe
Tamper Switch Out (COM)	Gray
Buzzer Control In	Blue
LED Control In (Red)	White with red stripe
LED Control In (Green)	Yellow
LED Control In (Yellow)	White with blue stripe



- The Reader transmits Card & PIN data on RS232 or RS485 lines.

9. Operation

9-1. Connector Layout



※ JP2: Close, JP4: Open (Please do not change by yourself.)

9-2. Output Mode Setting

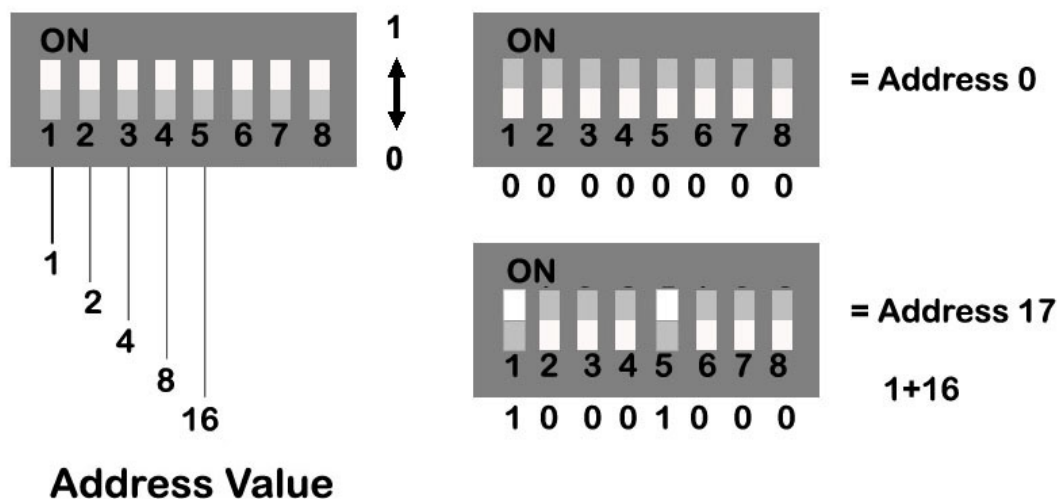
Table 1. Jumpers Setting

JP3	JP5	Card Output Format	Keypad Output Format
<u>open</u>	<u>open</u>	<u>34bit Wiegand + RS232</u>	<u>8bit Burst</u>
open	close	34bit Wiegand + RS232	4bit Burst
close	open	34bit Wiegand + RS232	34bit Wiegand + RS232
close	close	34bit Wiegand + RS232	34bit Wiegand + RS232

※ **Note:** Default setting value for JP3 and JP5 jumpers are “open” (open circuit)

9-3. DIP Switch Setting

Example



No. 6 – RS232 or RS485(0: RS232, 1: RS485)

No. 8 – SR30RW initialization (1: initialization (Switch to 0 after keeping about 1.5sec.))

9-4. Operation

9-4-1. Basic Operation

1. Once the power is applied, you should hear 4 initial beeps and red and yellow LEDs on indicating that the reader is in standby mode after a successful initialization and diagnostics.
2. Present a Smart[Mifare] card to the reader until you hear the beeping sound and the green LED come on. The reader will send the Smart[Mifare] card data to the controller then the yellow LED on again for the next reading.

3. Enter the Keypad until you hear the beeping sound. The reader will then send the Key data to the controller.
4. LED Control:
To change the LEDs color, you may connect the LED Control Input (yellow wire) to ground and the green LED will turn on indicating that the reader is in standby mode. Presenting a Smart [Mifare] card and the LED will then change colour to yellow then green again for the next reading.
5. Beeper Control:
In normal operation, the reader sounds one beep when it reads a Smart [Mifare] card.
However additional beeps can be sounded to improve indication for access status (granted or denied) by wiring blue wire of the beeper control input to system ground level.
Once the blue wire is connected to system ground, beeper will sound one time.
6. Tamper Switch
The SRK101RW has normal close (NC) type Tamper Switch. When the unit is installed with wall mount, the tamper switch output wires, the gray wire (COM) and the white with green wire (NC) will be short circuits. When the unit is removed from the wall mount, the tamper switch output wires will be open circuits.

9-4-2. Advanced Operation

Three LEDs Control:

To change the LED colors, you may connect the LED Control Input (Yellow wire for green LED, White with blue wire for yellow LED and White with red wire for red LED) to ground and relative LED will turn on while you are holding this wire to ground.

9-4-3. Setting a “Smart Card Read / Write Software”

After applying a power, initialization status of the SRK101RW is set to read card serial number. Using the SRK101RW, make sure that user's manual of IDTECK PRG2000 or Smart Card Read / Write Software to know methods on access control, debt meal and cashless payment.

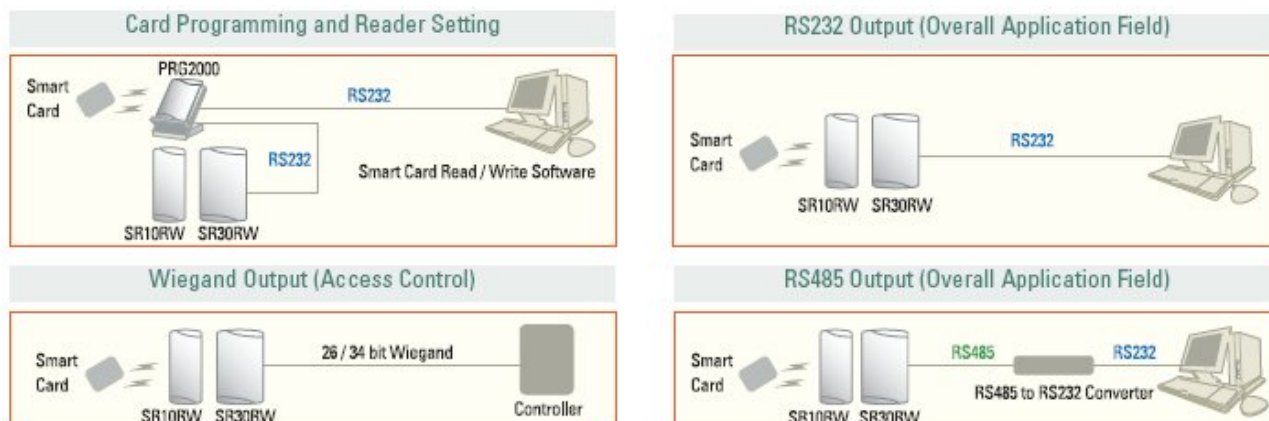
If the reader transmits card data normally, yellow LED indicators turn off with beeping one time and then green LED indicator turns on. After a moment, green LED indicator turns off, yellow LED indicator simultaneously turn on.

If not, twice alarm occurs that it is caused by retrying. And yellow LED indicators flicker one time at all.

In addition, third alarm occurs that it is caused by error. Also yellow LED indicators flicker one time at all.

※ If the unit doesn't operate normally, make sure that 12. Troubleshooting on this manual.

[SRK101RW Configuration]



The SRK101RW connects to PRG2000 for access control, debt meal and cashless payment. To know connection methods, make sure that user's manual of PRG2000 or Smart Card Read / Write Software.

The SRK101RW supports RS232 or RS485 communication on the all field.

Their communication is set by DIP switch. The SRK101RW also supports 26/34bit Wiegand output format on access control.

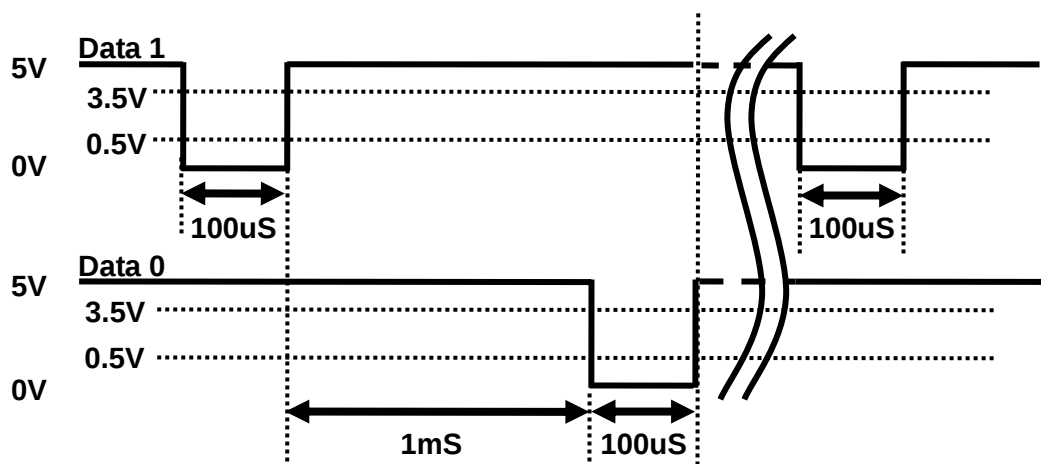
10. Output Format

10-1. 26/34bit Wiegand output format

1. Data format

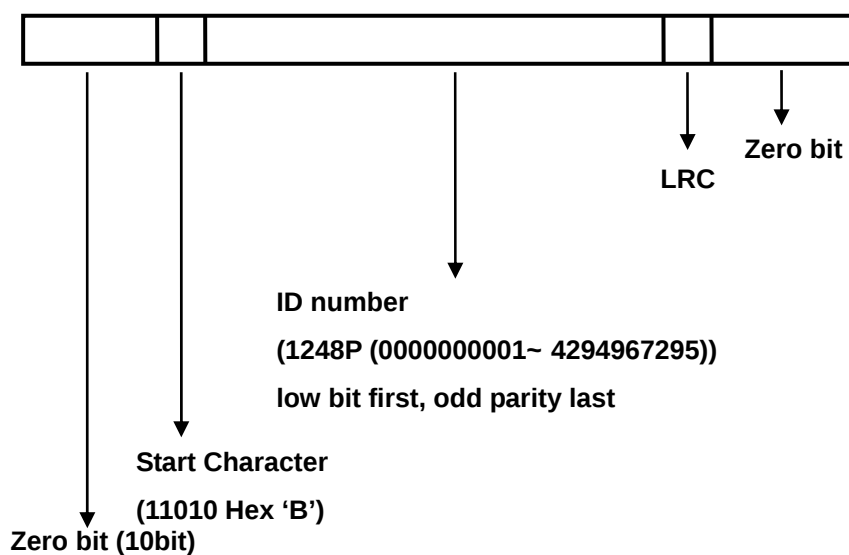
26bit Wiegand output format		34bit Wiegand output format	
Bit 1	Even parity of bit 2 ~ bit 13	Bit 1	Even parity of bit 2 ~ bit 17
Bit 2 ~ 9	Facility code (000 ~ 255)	Bit 2 ~ 25	4byte ID number (0000000001 ~ 4,294,967,295)
Bit 10 ~ 25	ID number (00000 ~ 65,535)		
Bit 26	Odd parity of bit 14 ~ bit 25	Bit 34	Odd parity of bit 18 ~ bit 33

2. Timing diagram

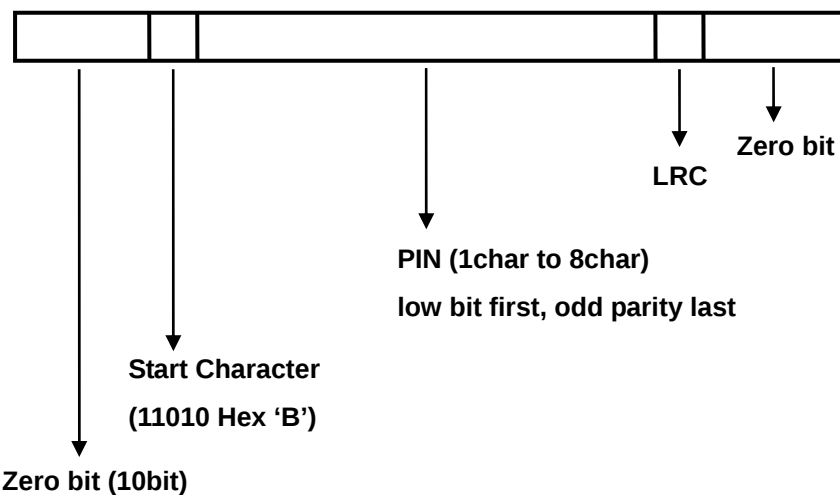


10-2. ABA Track II Magstripe output format

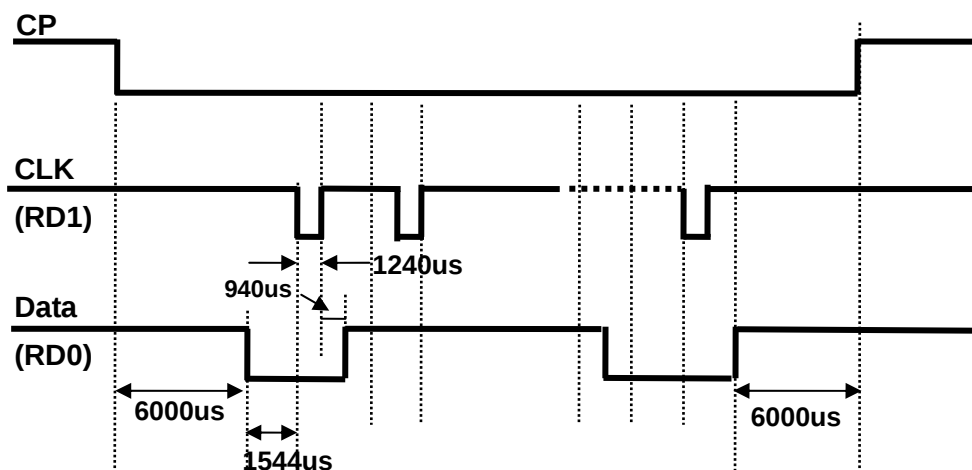
1. Data format (for Card numbers)



2. Data format (for PIN)



3. Timing diagram



10-3. 4 / 8bit Burst output format (for PIN)

1. Data format

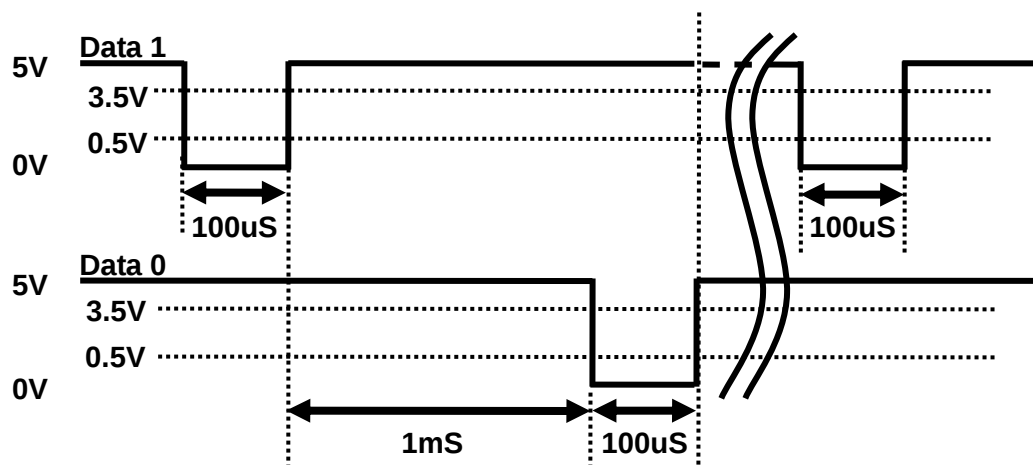
(4bit Burst output format)

Keypads	Binary	Hexa	Keypads	Binary	Hexa
0	0000	0	6	0110	6
1	0001	1	7	0111	7
2	0010	2	8	1000	8
3	0011	3	9	1001	9
4	0100	4	ESC	1010	A
5	0101	5	ENT	1011	B

(8bit Burst output format)

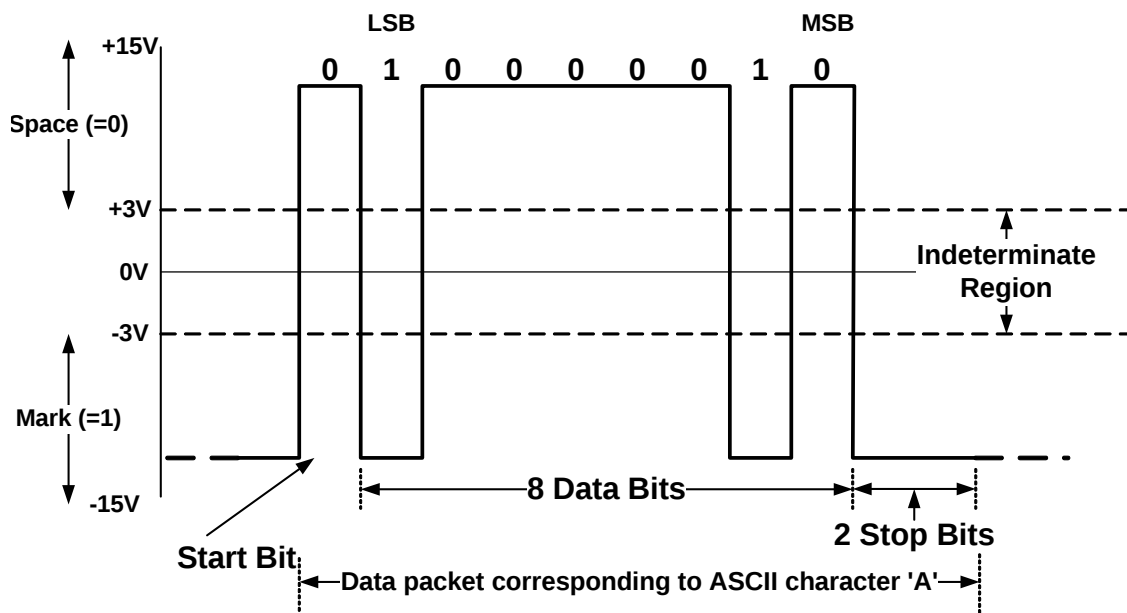
Keypads	Binary	Hexa	Keypads	Binary	Hexa
0	11110000	F0	6	10010110	96
1	11100001	E1	7	10000111	87
2	11010010	D2	8	01111000	78
3	11000011	C3	9	01101001	69
4	10110100	B4	ESC	01011010	5A
5	10100101	A5	ENT	01001011	4B

2. Timing diagram



10-4. RS-232 output format

1. Data format (Baud rate: 9600bps)



11. FCC Registration Information

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with **Part 15 of the FCC Rules**.

Operation is subject to the following two conditions;

1. This device may not cause harmful interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a **Class B Digital Device**, pursuant to **Part 15 of the FCC Rules**. These limits are designed to this equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

12. Warranty and Service

The following warranty and service information applies only to the United States of America and Republic of Korea. For the information in other countries, please contact your local distributor. To obtain in or out of warranty service, please prepay shipment and return the unit to the service facility listed below.

Headquarters: IDTECK Co., Ltd.

5F Ace Techno Tower B/D,
684-1 Deungchon-Dong, Gangseo-Gu,
SEOUL, KOREA 157-030

Tel: +82-2-2659-0055

Fax: +82-2-2659-0086

E-mail: webmaster@idteck.com

Website: www.idteck.com

U.S Branch: RF Logics Inc.

370 Amapola Ave, #106

Torrance, CA 90501

Tel: 310-782-8383

Fax: 310-782-8298

E-mail: rflogics@rflogics.com

Website: www.rflogics.com

Hong Kong Branch: IDTECK Hong Kong

12/F, B2B Centre, No.36 Connaught Road West, Hong Kong

Tel: 852-2581-9580

Fax: 852-2234-5150

E-mail: alchu@gala.com.hk

Website: www.ristarhk.com

Please use the original container, or pack the unit(s) in a sturdy carton with sufficient packing to prevent damage, include the following information:

1. A proof-of-purchase indicating model number and date of purchase.
2. Bill-to address.
3. Ship-to address.
4. Number and description of units shipped.
5. Name and telephone number of person to contact.
6. Reason for return and description of the problem.

NOTE: Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly to the carrier.

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The specifications contained in this manual are subject to change without notice at any time.

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