INSTRUCTION

STAR RFK101

Proximity Reader with KEYPAD

ID TECK Co. Ltd.

CONTENTS

1. Introduction

The STAR RFK101 is an elegant looking and built in an attractive 4" read range proximity reader with KEYPAD. The RFK101 has back lighting on the KEYPAD that ensure you successful operation even the night operating. The KEYPAD allows you to access door with proximity card and personal PIN numbers.
Three LEDs of green, yellow and red, inside Piezo buzzer sound will guarantee you an accurate and reliable system operations.

2. Identifying supplied parts

Please unpack and check the contents of the box.

Reader unit
(1 ea)

Wall Mount
(1 ea)

O-ring
(5 ea)

Instructions
(1 ea)

3. Specification

Read Range/Time	Up to 4"(10cm) / 30ms
Input Voltage/Current	DC 12V, 150mA
Reset	Power on reset and WDT reset
LED/Beeper	3 LEDs(Red, Yellow and Green) / Piezo Buzzer
Keypad	12key, Back lighting

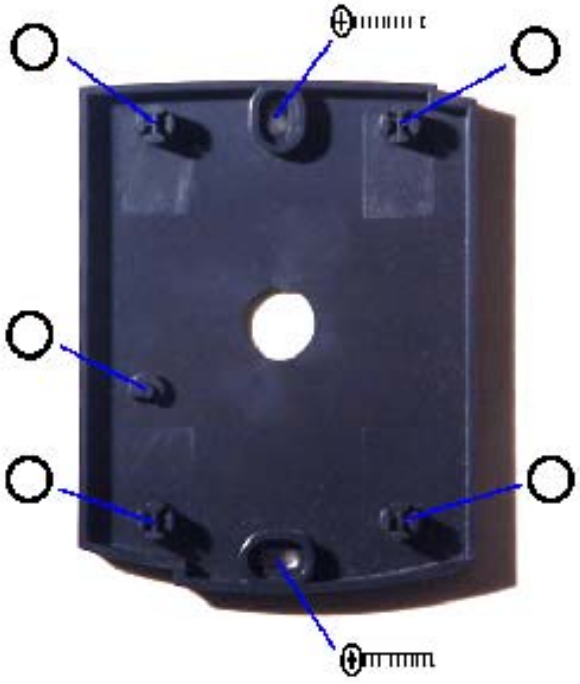
Color	Dark Pearl Gray
Operating Environment	-35°C ~ +65°C, 10~90% Humidity
Overall Size(WxHxD)	3.40"x3.94"x1.22"(487x100x31mm)
Weight	0.412 lbs(190 g)
Output Format	26bit Wiegand, RS-232, ABA Track II Magstripe Output Format with 8bit Burst or 3x4 Matrix Format for PIN

4. Installation

4-1. Drill two 6-32 or M3 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.)

4-2. Using two 6-32 or M3 screws, install wall mount to the wall.

4-3. 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.



5. Wire Color Table of the Reader

POWER

Power(DC 12V)	+12V	Red wire
Power(DC 12V)	0V(GND)	Black wire

OUTPUT

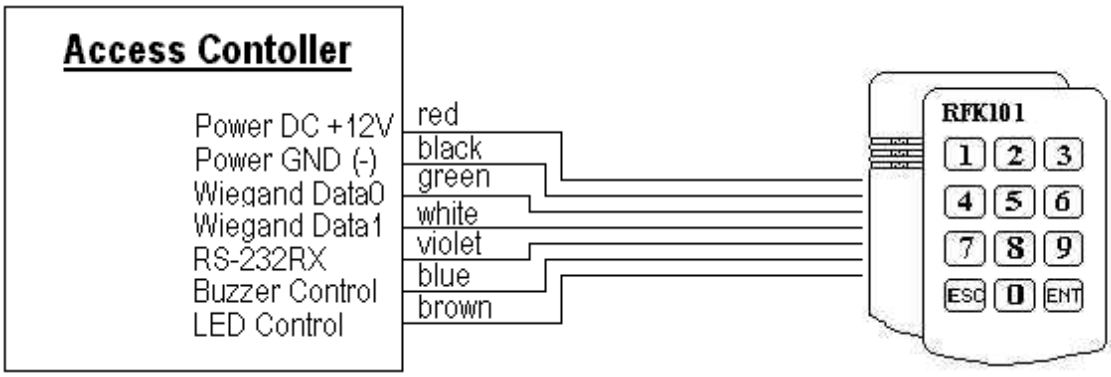
ABA Track II(Card Present)	CLS	Yellow wire
ABA Track II(Clock), Wiegand Data1	RD1	White wire
ABA Track II(Data), Wiegand Data0	RD0	Green wire
RS-232 TX	TX	Violet wire
KEYPAD 3x4 Matrix(Column0)	C0	White wire with blue band
KEYPAD 3x4 Matrix(Column1)	C1	White wire with green band
KEYPAD 3x4 Matrix(Column2)	C2	White wire with red band
KEYPAD 3x4 Matrix(Row0)	R0	Cyan wire
KEYPAD 3x4 Matrix(Row1)	R1	Pink wire
KEYPAD 3x4 Matrix(Row2)	R2	Orange wire
KEYPAD 3x4 Matrix(Row3)	R3	Gray wire

INPUT

LED Control	LED	Brown wire
Beeper Control	BEEP	Blue wire

6. Wire Connection to Controller

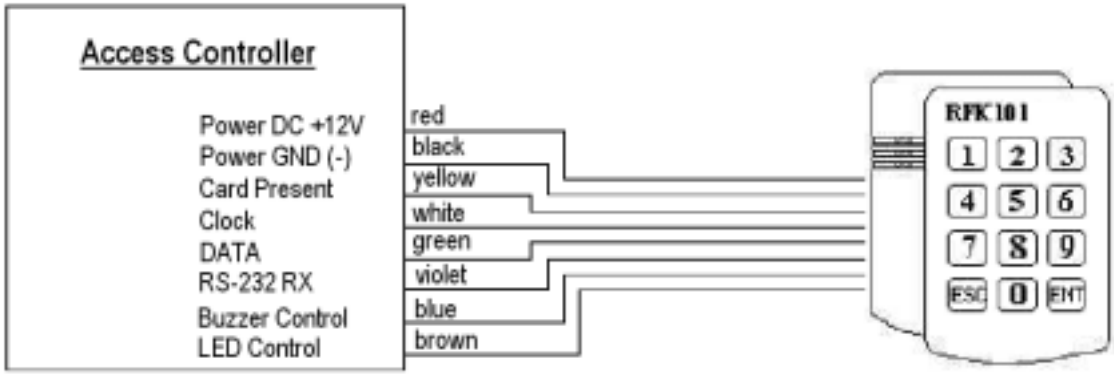
6-1. 26bit Weigand+RS232(for Card) and 8bit Burst format(for PIN)



. The Reader transmits Card data to Wiegand Data0,Data1 and RS-232 TX line.

. The Reader transmits PIN data to Wiegand Data0 and Data1.(8bit Burst format.)

6-2. ABA Track II+RS232(for Card) and ABA Track II+RS232(for PIN)

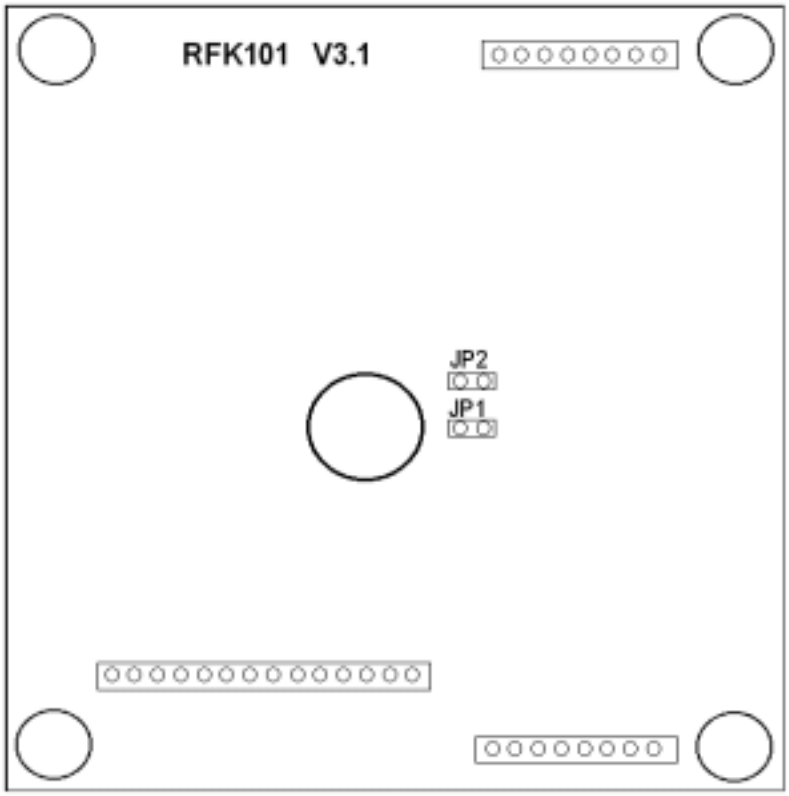


. The Reader transmits Card and PIN data to Card present, Clock, DATA and RS-232 TX line.

NOTE : You have to enter at least 1 numeric number(max. 8 numbers) followed by "ENT" key.

7. Operation

7-1. Connector Layout



7-2. Output mode Setting

Table 1. Jumpers Setting

JP1	JP2	Card Output format	Keypad Output format
close	close	26bit Wiegand + RS232	8bit Burst (or 3x4 Matrix)
open	close	26bit Wiegand + RS232	26bit Wiegand + RS232(or 3x4 Matrix)
close	open	ABA Track II + RS232	8bit Burst (or 3x4 Matrix)
open	open	ABA Track II + RS23	ABA Track II + RS232 (or 3x4 Matrix)

Note: Default setting value for JP1 and JP2 jumpers are “close”(short circuit)

7-3. Operation

1. Once the power is applied, you should hear 3 times of initial beep sounds and red And yellow LEDs on indicating that the reader is in standby mode after a successful initialization and diagnostics.

2. Present proximity card to the reader until you hear the beeping sound and the green LED on. The reader will send the RF 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 send the Key data to the controller.

4. LED Control:

   To change the LED colors, you may connect the LED Control Input (brown wire) to ground and the green LED will turn on indicating that the reader is in standby mode. Present proximity card and the LED will change color to yellow then green again for the next reading.

5. Beeper Control:

   In normal operation, the reader generates one beep when it reads a proximity card, However additional beeps can be generated to improve indication for access status(granted or denied) by forcing the Beeper Control Input, blue wire to system ground level. The beeper will remain on as long as the blue wire is connected to system ground.

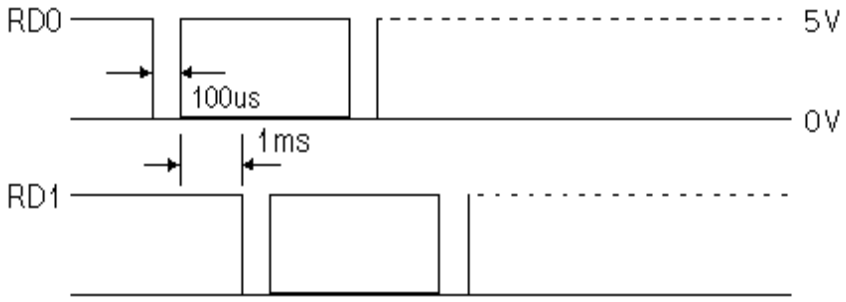
8. Output Format

8-1. 26bit Wiegand output format

1. Data format

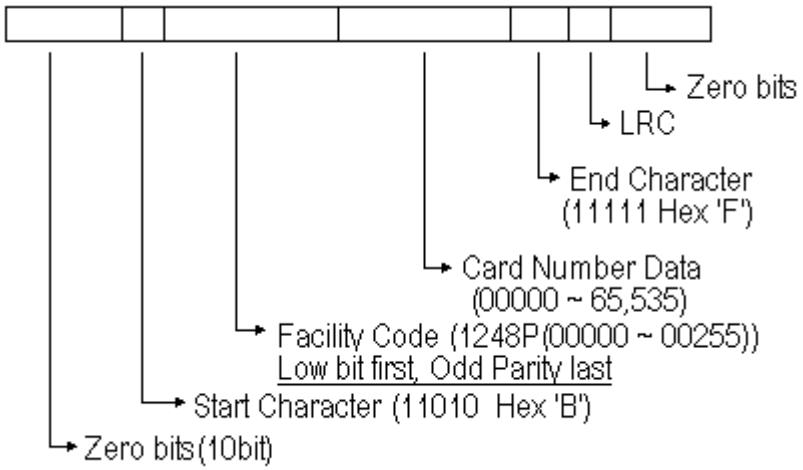
Bit 1 : Even parity of bit 2 ~ bit 13
Bit 2 9 : Facility code (000 ~ 255)
Bit 10 25 : ID number (00000 ~ 65,535)
Bit 26 : Odd parity of bit 14 ~ bit 25

2. Timing diagram

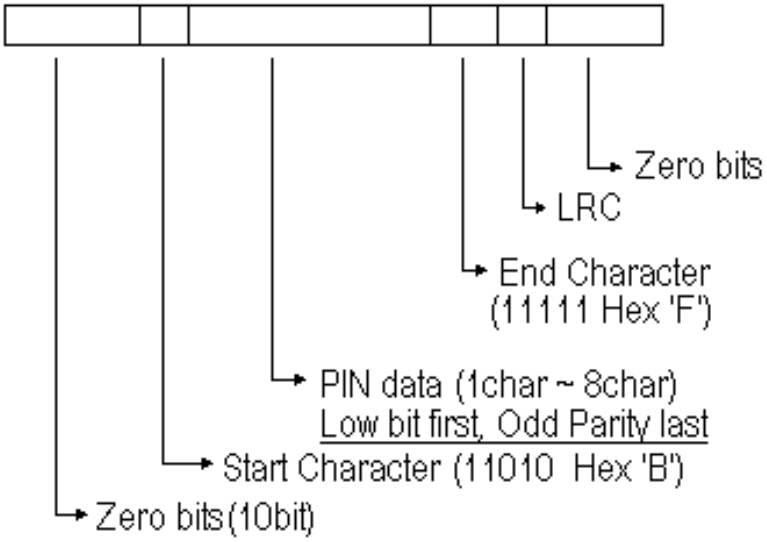


8-2. ABA Track II Magstripe output format

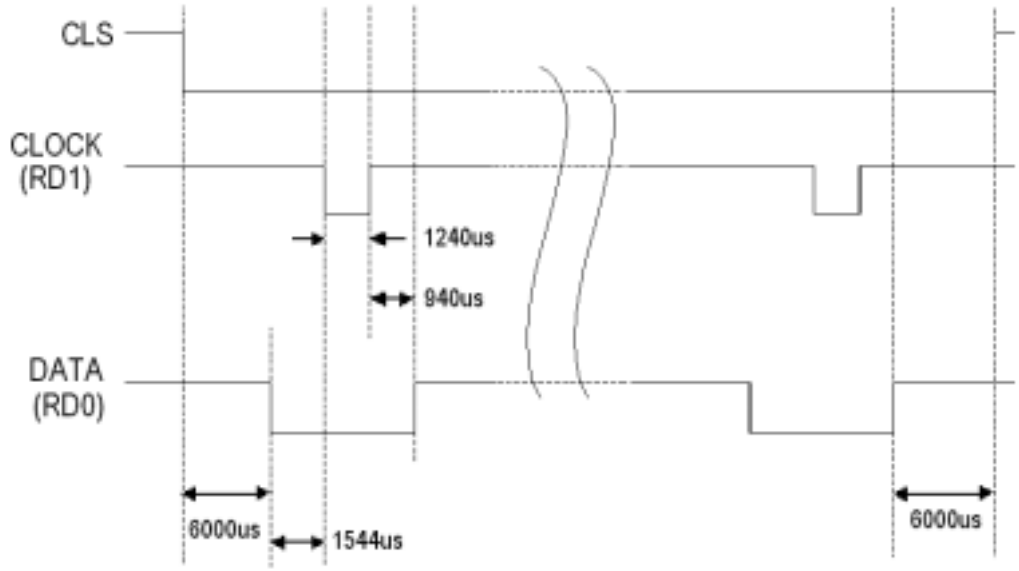
1. Data format(for Card numbers)



2. Data format(for PIN)



3. Timing diagram

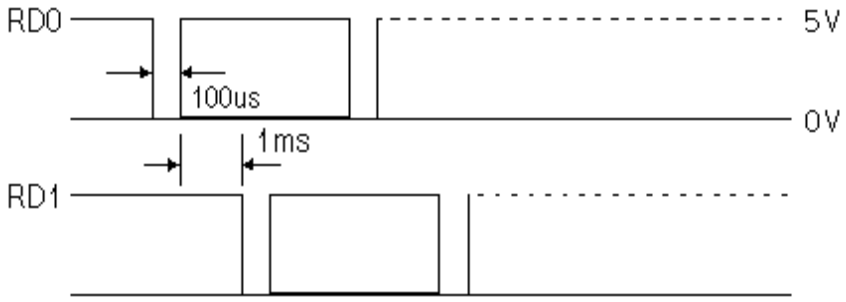


8-3. 8bit Burst output format(for PIN)

1. Data format

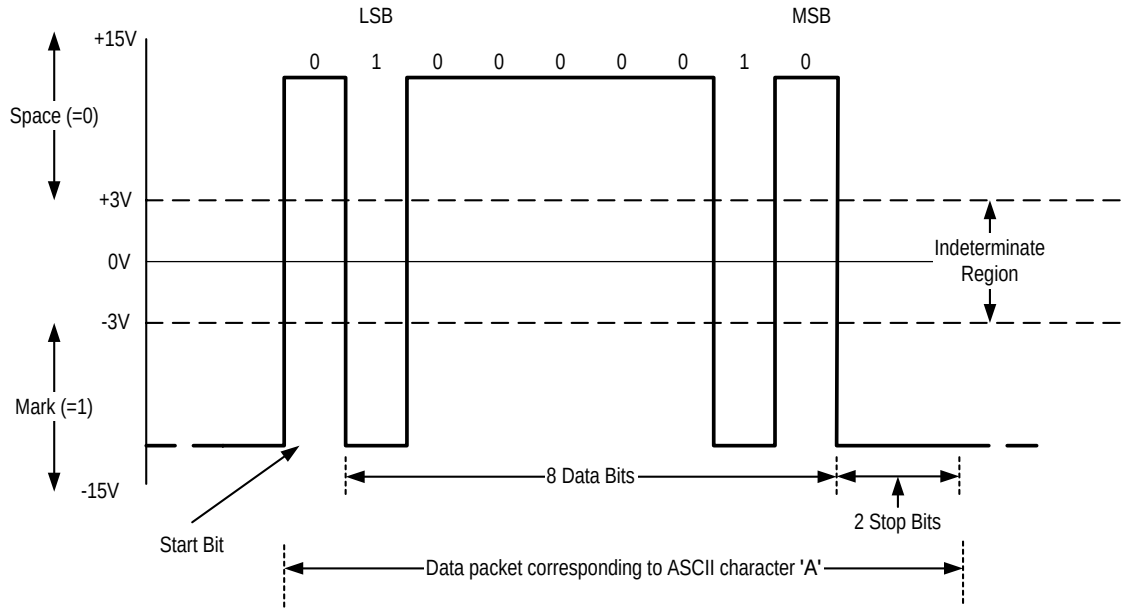
Keypads	Binary	Hexa		Keypads	Binary	Hexa
0	11110000	F0		6	10010110	96
1	11100001	E1		7	10000111	87
2	11010010	D2		8	01111000	78
3	11000011	C3		9	01101001	69
4	10110100	B4		ESC	01011010	5A
5	10100101	A5		ENT	01001011	4B

2. Timing diagram



8-4. RS-232 output format

1. Data format(Baud rate : 9600bps)



2. Data structure

START(0X02H)	DATA(8 Char)	END(0x03H)	LRC	(CARD output)

START(0X02H)	DATA(1~8 Char)	END(0x03H)	LRC	(Keypad output)

8-5. Matrix(3x4) format

1. Data format

		Column0 ↓	Column1 ↓	Column2 ↓
Row0	→	1	2	3
Row1	→	4	5	6
Row2	→	7	8	9
Row3	→	ESC	0	ENT

9. 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 interference, 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 A 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.

10. 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.

IN THE UNITED STATES

RF LOGICS Inc. Service Center
3026 Scott Blvd.,
SANTA CLARA, CA95054
Tel.: (408) 980-0001
Fax.: (408) 980-8060
E-mail: rflogics@rflogics.com
Web-site: www.rflogics.com

OUTSIDE OF THE UNITED STATES

ID TECK CO., LTD. Service Center
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