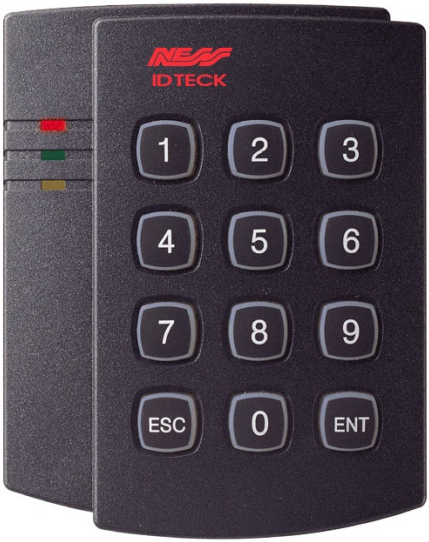
IDTECK



PROXIMITY READER WITH KEYPAD

101-048 IPK101 ASK (EM) Format
101-064 RFK101 PSK Format

USER'S MANUAL

CONTENTS

1. Introduction

The NESS - IPK101 / RFK101 is an elegant looking and built in an attractive 10cm (4") read range proximity reader with KEYPAD. The unit has back lighting on the KEYPAD that ensures 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

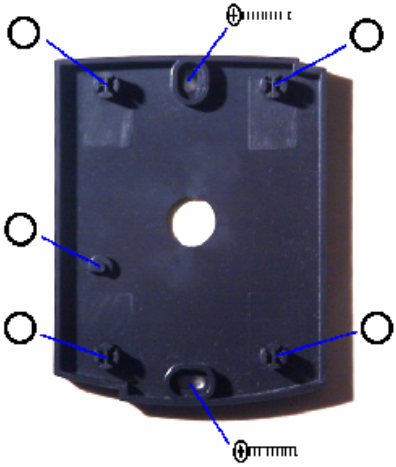
Read Range/Time	Up to 10cm (4") / 30ms
Card format	ASK (EM) format IPK101 / PSK format RFK101
Input Voltage/Current	DC 12V, 150mA
Reset	Power on reset and WDT reset
LED/Beeper	3 LEDs (Red, Yellow and Green) / Piezo Buzzer
Keypad	12key back lighting
Colour	Dark Pearl Grey
Operating Environment	-35℃ ~ +65℃, 10~90% Humidity
Overall Size (WxHxD)	487x100x31mm (3.40"x3.94"x1.22")
Weight	190 g (0.412 lbs)
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 8.38cm (3.3") apart in vertical and one 1/2" hole at the centre 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 centre 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 Colour Table of the Reader

POWER

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

OUTPUT

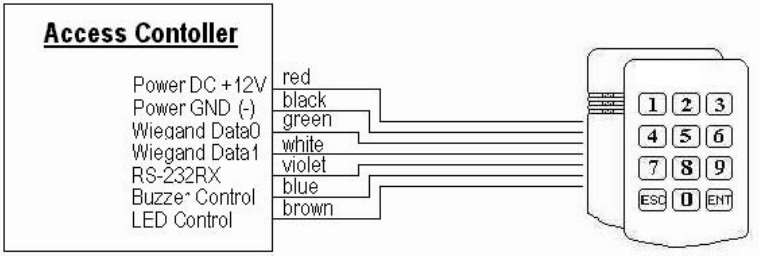
ABA Track II (Card Present)	CLS	Yellow wire
ABA Track II (Clock), Wiegand Data1	RD1	White wire
ABA Track II (Data), Wiegand Data0	RD0	Green wire
RS-232 TX	TX	Violet wire
KEYPAD 3x4 Matrix (Column0)	C0	White wire with blue band
KEYPAD 3x4 Matrix (Column1)	C1	White wire with green band
KEYPAD 3x4 Matrix (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	Grey wire

- **INPUT**

LED Control	LED	Brown wire
Beeper Control	BEEP	Blue wire

6. Wire Connection to Controller

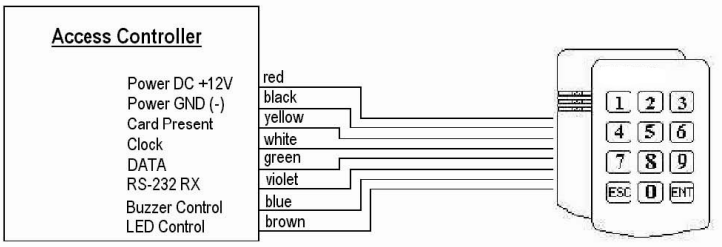
6-1. 26bit Weigand+RS232 (for Card) and 8bit Burst format (for PIN)



. 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)

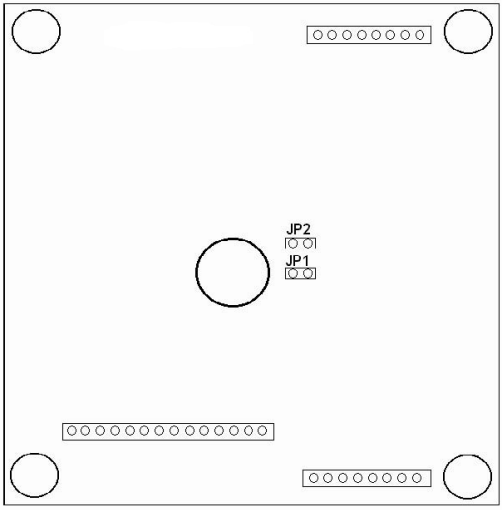


The Reader transmits Card & PIN data on card presentation, Clock, DATA and RS-232 TX line.

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 initial beeps and red and yellow LEDs on indicating that the reader is in standby mode after a successful initialisation and diagnostics.

2. Present a proximity card to the reader until you hear the beeping sound and the green LED come 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 then send the Key data to the controller.

4. LED Control:

   To change the LED colours, 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. Presenting a proximity 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 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.

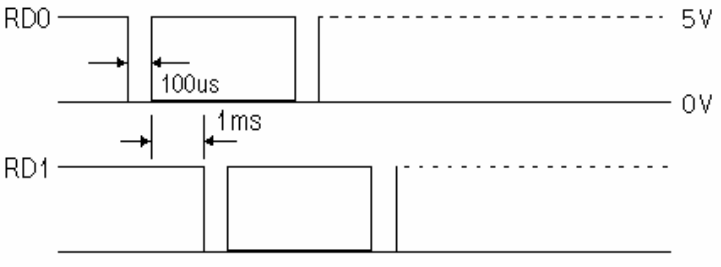
8. Output Format

8-1. 26bit Wiegand output format

1. Data format

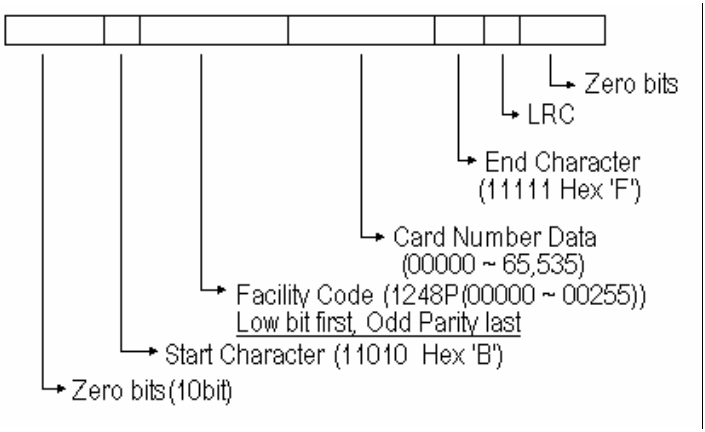
Bit 1	: Even parity of bit 2 ~ bit 13
Bit 2 ~ 9	: Facility code (000 ~ 255)
Bit 10 ~ 25	: ID number (00000 ~ 65,535)
Bit 26	: Odd parity of bit 14 ~ bit 25

2. Timing diagram

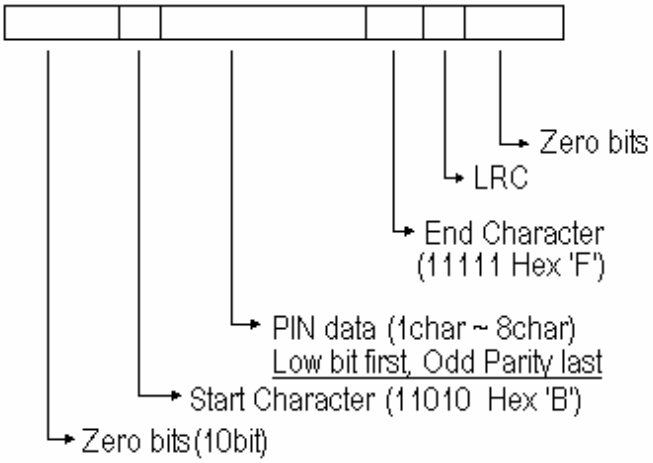


8-2. ABA Track II Magstripe output format

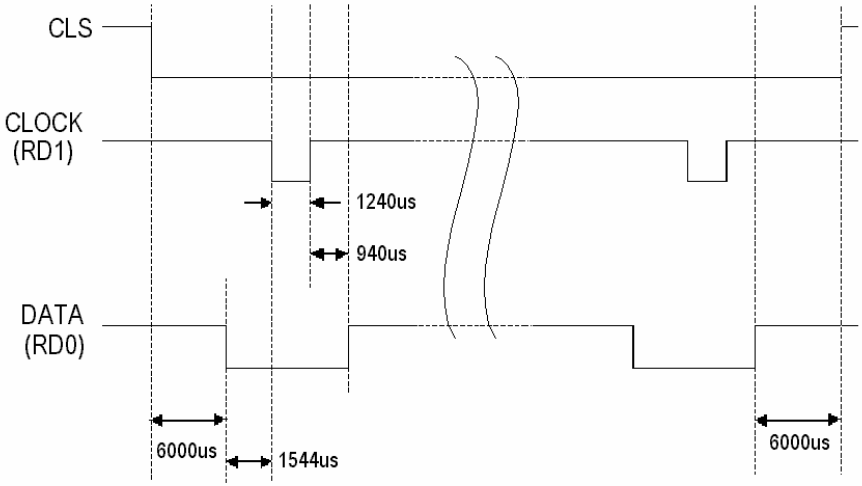
1. Data format (for Card numbers)



2. Data format (for PIN)



3. Timing diagram

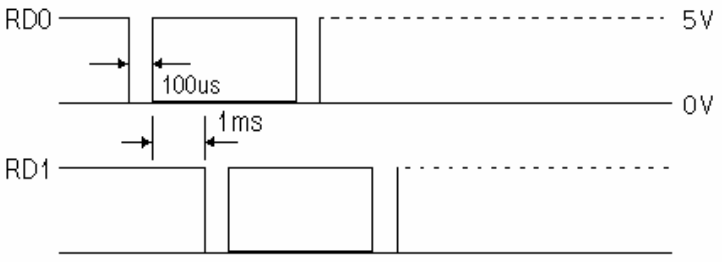


8-3. -8bit Burst output format (for PIN)

1. Data format

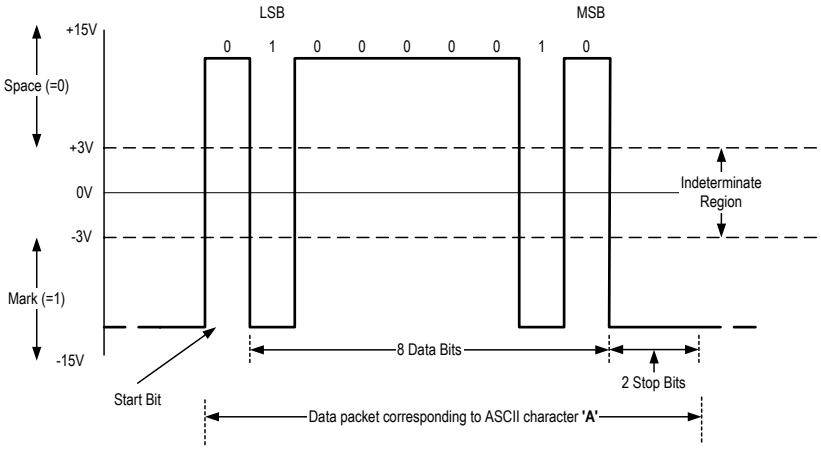
Keypads	Binary	Hexa		Keypads	Binary	Hexa
0	11110000	F0		6	10010110	96
1	11100001	E1		7	10000111	87
2	11010010	D2		8	01111000	78
3	11000011	C3		9	01101001	69
4	10110100	B4		ESC	01011010	5A
5	10100101	A5		ENT	01001011	4B

2. Timing diagram



8-4. RS-232 output format

1. Data format (Baud rate: 9600bps)



2. Data structure

NESS - IDTECKT (0X02H)	DATA (8 Char)	END (0x03H)	LRC	(CARD output)

NESS - IDTECKT (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

Access Control

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