

U-Prox-Keypad reader

User manual



Introduction

The proximity reader U-Prox-Keypad with built in keypad is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42, Wiegand auto and Touch Memory interface.

The direct and reverse ID bytes order supported. Secure mode with reader and cards serialization available.

The interface type is to be changed by special PC program. If you need to change the interface type, please call your distributor. The reader placed in elegant plastic case with bicolor LED indicator and keypad on front panel.

Types of cards

Integrated Technical Vision Ltd manufactures readers operating with amplitude modulation (ASK) and/or frequency modulation (FSK) proximity cards and tags.

Features

Case

Material	ABS plastic
Color	black
Dimensions	119.4 x 65.4 x17.5 mm
Weight	240 g

Ambient Conditions

Oper. temp.	-0°C . . . +60°C
Stor. temp	-0°C . . . +80°C
Humidity	100% rel. at +25 °C

Electrical

Voltage	+9. . . +16 VDC
Max current	up to 75 mA
Voltage ripple	up to 500 mV _{p-p} .

Read Range

Typical read range is 80 mm and depends on tag type used.

Wiring

Reader has 8 wire cable for connecting to the access control panel.

Table 1. The wires assignment.

Color	Wiegand	RS232 (reader)	DB-9 (computer)
Function			
Green	Data 0	Rx	3
White	Data 1	Tx	2
Red	+V	+V	
Black	GND	GND	5
Brown	Red Led	-	
Orange	Green Led	-	
Blue	Beep	-	
Yellow	Hold	Hold	

AWG22 multiwire signal cable is recommended. Using this cable the maximum length of 150 meters can be obtained*.

When you connect the reader to the interface TouchMemory (iButton), and it does not work consistently (for example, does not transmit the code identifier controller), you should use

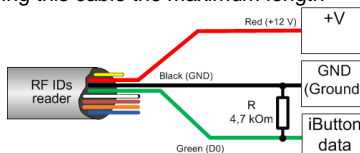


Figure 1

* Not for RS232 interface

4,7kOm resistor (supplied) installed between the terminal and iButton "Earth" reader, as shown in Fig. 1.

When using twisted pair (STP, UTP, FTP) to connect the reader should be followed the order of connection shown in Fig. 2.

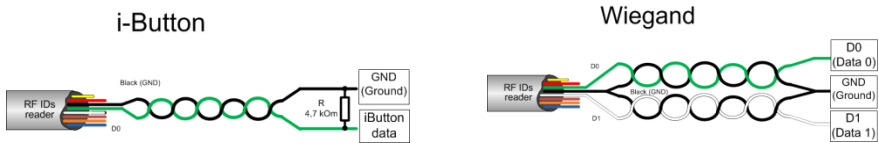


Figure 2

Type of interfaces

The proximity reader is intended to apply in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42, Wiegand auto and Touch Memory interface.

Mounting

It is recommended to mount the reader on a wall closely to a door at appropriate height.

- ❗ Do not place the reader on the metal surfaces, since it causes decreasing of reading distance.
- ❗ If more than one reader is used in the system, place them not closer than 20 cm one from another to eliminate the effect of double reading
If impossible to place readers at a distance more than 20 cm one from another it is allowed to place readers at a distance not less than 10 cm when their yellow wires are interconnected. In this operating mode readers work synchronously and alternately.
- ❗ Using this operating mode is not recommended when set automatic recognition type of proximity identifier (ASK/FSK).

Reader installation

- Loosen the screw at the bottom of the reader.
- Remove the top cover, remove the back plate.
- Mount the back plate of reader on the wall using the fixtures provided (see fig. 3).
- Prepare all wires for connection and connect them to the reader in according to Table 1 and User Manual of the access control panel to be utilized.
- Insert the reader in the back plate (see fig. 4).
- Put the top cover and tighten screw at the bottom of the reader.
- Ensure that all locking tabs are securely engaged.

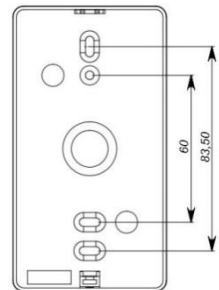


Figure 3

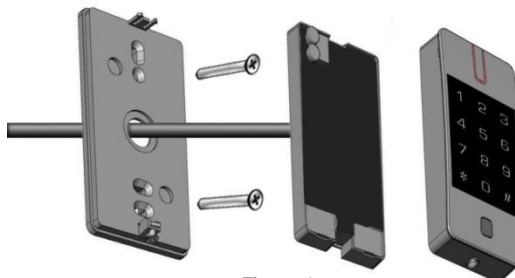


Figure 4

The Reader Operation

The RFID Card Code Reading

The card code reading is annunciated by built-in buzzer and LED lamp according to interface type and annunciation mode (see Section «Data transfer and Annunciation»). Repeated reading will be available after 0.75 sec if the card is removed from the reader sensing area.

Hold Mode

Reader is turned to the hold mode while yellow wire is closed to ground. In this mode reader does not read cards, thus current consumption decreases.

- ! Do not apply voltage to yellow wire!

Data transfer and control of annunciation

The reader is provided with two-colour LED indicators and buzzer. LED and buzzer function according to interface type programmed and annunciation mode.

Wiegand Interface

Engaging of LED and buzzer is possible automatically or by grounding of corresponding wire according to Table 2.

Table 2. Annunciation mode:

Data transmissions from reader comply with standard Wiegand26, Wiegand32, Wiegand34, Wiegand37, Wiegand40, Wiegand42 and Wiegand auto.

	Buzzer	Red LED	Green LED
00	Beep on card read	LED normally on, switch off at reading	Blinking at reading
01	Control from outside	LED normally on, switch off at reading	Blinking at reading
02	Beep on card read	Switch off	Blinking at reading
03	Control from outside	Switch off	Blinking at reading
04	Beep on card read	LED normally on, switch off at reading	Control from host
05	Control from outside	LED normally on, switch off at reading	Control from host
06	Beep on card read	Control from host	Control from host
07	Control from outside	Control from host	Control from host
08	Beep on card read Possibly to control from outside	LED normally on, switch off at reading Possibly to switch off from outside	Blinking at reading Possibly to switch on from outside

Keypad codes

Reader transmits keypad codes in one of the programmed modes – package or digit-by-digit.

In package mode reader stores up to 10 presses of '0' to '9' keys and transmits package after the '#' key press. If there are less than 10 digits pressed the leading digits filled with hexadecimal digit 'F'. The '*' key press clears all previous key presses.

In digit-by-digit operation mode reader transmits the key code immediately after the key press with 6-bit package. The key codes are in the table below:

Key	Code transmitted		key	Code transmitted	
	(hex)	(binary)		(hex)	(binary)
0	01	000001	6	2C	101100
1	02	000010	7	2F	101111
2	04	000100	8	31	110001
3	07	000111	9	32	110010
4	29	101001	*	34	110100
5	2A	101010	#	37	110111

DORADO digit-by-digit operation. In this mode reader transmits the key code immediately after the key press with 8-bit package. The key codes are in the table below:

Key	Code transmitted		Key	Code transmitted	
	(hex)	(binary)		(hex)	(binary)
0	F0	11110000	6	96	10010110
1	E1	11100001	7	87	10000111

2	D2	11010010	8	78	01111000
3	C3	11000011	9	69	01101001
4	B4	10110100	*	5A	01011010
5	A5	10100101	#	4B	01001011

Data transfer depends on interface type. For TouchMemory interface it is identifier Type 01 according to DS1990.

Interface RS232

To control annunciation send control packet to the reader. Packets should be transmitted with 2 400 baud rate, 8 bit data, no parity, 1 stop bit.

Table 3. Packet format

Bit	7	6	5	4	3	2	1	0
Byte 0	0	1	0	0	1	0	0	1
Byte 1	-	-	red LED blinking	-	red LED lit	-	-	-
Byte 2	green LED lit	-	green LED blinking	-	-	Buzzer beeps	-	Buzzer continuous

1 – corresponds LED or buzzer switched on. LED blinking and buzzer ‘beeps’ control bits have the highest priority.

Annunciation does not change until next control packet received.

Reader transmits data as follows:

# of byte	0	1 ... 10	11	12
Dest.	23h	data	checksum	0Dh

data:

Bit	7	6	5	4	3	2	1	0
Value	0	0	1	1	x	x	x	x

Check-sum: exclusive OR of low nibbles of bytes from 1 to 10, high nibble of always must be 3h.

Example: Card code 7E000460AA will be sent as:

23h, 37h, 3Eh, 30h, 30h, 30h, 34h, 36h, 30h, 3Ah, 3Ah, 3Bh, 0Dh.

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Integrated Technical Vision Ltd. warrants that for a period of eighteen months from the date of purchase, the product shall be free of defect in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Integrated Technical Vision Ltd. shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not damages incurred in shipping or handling, or damages due to causes beyond the control of Integrated Technical Vision Ltd. such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

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