

U-Prox-mini proximity reader User manual

Introduction

The proximity reader U-Prox-mini 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 interface type is to be changed by special PC program. If you need to change the interface type please call your distributor.

The reader is placed in elegant plastic case with two color LED indicator 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.

Benefits

Case	
Material	ABS plastic
Color	black, gray, white
Dimensions	80 x 45 x 12,5 mm
Weight	70 g
Ambient Conditions	
Oper. temp.	-35°C . . . +60°C
Stor. temp	-30°C . . . +80°C
Humidity	100% rel. at +25 °C
Electrical	
Voltage	+4,75. . . +16 VDC
Current	up to 30 mA
Max current	up to 50 mA
Voltage ripple	up to 500 mV _{p-p} .

Distance of reading

Typical reading distance is 50-100 mm and depends on tag type used with it.

Wiring

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

Table 1. The wires assignment.

Color	W2 / W3 / W4 / WS	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 .

* Not for RS232 interface
<http://www.itvsystems.com.ua>

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

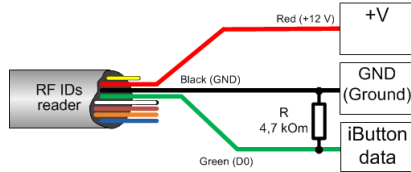


Figure 1

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

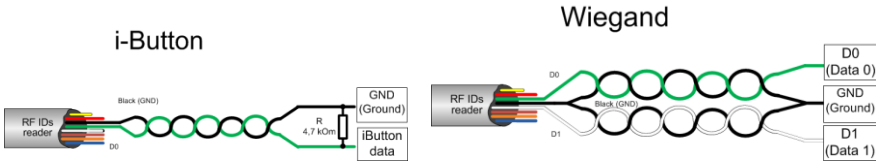


Figure 2

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 fixturing 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.

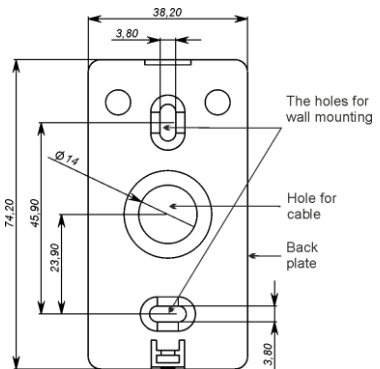


Figure 3

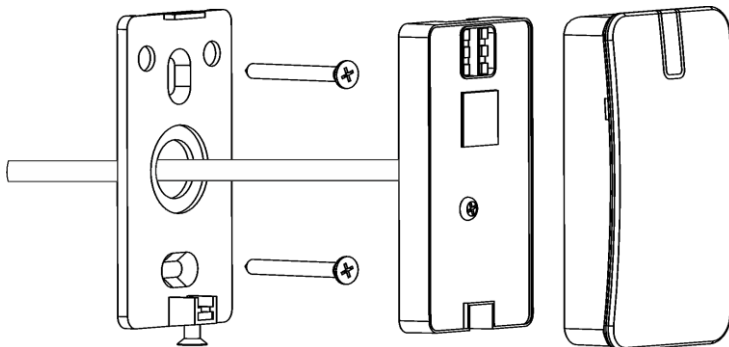


Figure 4

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, Wiegand37, 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

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 pulsatory	-	Buzzer uninterruptedly

1 – corresponds LED or buzzer switched on. LED blinking and buzzer pulsatory 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

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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