iPR-6 proximity reader
User manual

Introduction

The proximity reader iPR-6 is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42 or TouchMemory 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 colour LED indicator on front panel.

Types of cards

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

Benefits

Case	
Material	ABS plastic
Dimensions	105 x 60 x 20mm
Weight	105 g
Ambient Conditions	
Oper. temp.	-35 ^{0}C ... +60 ^{0}C;
Stor. temp.	-30 ^{0}C ... +80 ^{0}C;
Humidity	100% rel. at +25 ^{0}C
Electrical	
Voltage	+9. . . +16 VDC
Current	up to 50 mA
Max current	up to 80 mA
Voltage ripple	up to 500 mV_{p-p}.

Distance of reading

Typical reading distance is 160-170 mm and depends on tag type used with it. This parameter is valid for power supply voltage range from +8 to +18 VDC and ripple up to 150 mV_{p-p}.

Wiring

Reader has 8 wire cable for connecting to the access control panel. Table 1. The wires assignment.

	W2 / W3 / W4 / WS	RS232	TouchMemory
Color	Function		
Green	Data 0	Rx	iButton
White	Data 1	Tx	–
Red	+V	+V	+V
Black	GND	GND	GND
Brown	Red Led	–	Red Led
Orange	Green Led	–	Green Led
Blue	Beep	–	Beep
Yellow	Hold/Synch	Hold/Synch	Hold/Synch

AWG22 multiwire signal cable is recommended. Using this cable the maximum length of 100 meters can be obtained*.

Type of interface

The proximity reader is intended to apply in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42 or TouchMemory 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 two readers are mounted at a distance less than 50sm, reading distance of a card may be reduced appreciably. In such a case, connect yellow wires of the readers. The readers will synchronize and work in turn.
- Synchronization allows mounting of two readers at a small distance, to the extent of reading distance of a card. In case that, two readers are mounted at a distance less than reading distance of a card the card may be read by the reader behind the wall.

- Remove the cover from the reader.
- Prepare all wires for connection and connect them to the reader in accordance with Table 1 and User Manual of the access control panel to be utilized.
- Mount the reader to the wall using the fixturing provided.
- Secure cover to the reader. Ensure that all locking tabs are securely engaged.

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* Not for RS232 interface

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 decrease.

❗ 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 or TouchMemory Interface

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

Table 2. Annunciation mode:

Data transmissions from reader comply with standard Wiegand26, Wiegand37, Wiegand42 or TouchMemory protocols. Protocol for

	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

TouchMemory interface from family 01 (to satisfy the requirements 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.

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 – correspond switch on LED or buzzer. LED blinking and buzzer pulsatory control bits have highest priority.

Annunciation does not change until next control packet received.

Reader transmits data as follows:

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

Data:

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

Checksum: 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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