Proximity reader
# iPR-A2RSx, iPR-A2W2x, iPR-A2W3x, iPR-A2W4x, iPR-A2WSx, iPR-A2TMx
user manual

Introduction

The proximity reader PR-x06 is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42, Wiegand with automatic choice or TouchMemory interface.

The interface type is to be changed by special PC programm. 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.
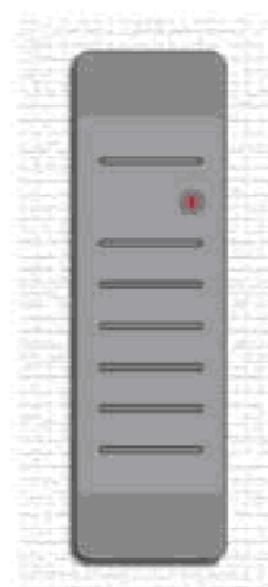
Types of cards

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

Benefits

Case
  Material   ABS plastic
  Dimensions   150 x 45 x 22 mm
  Weight   50 g
Ambient Conditions
  Oper. temp.   -35 ^{0}C ... +55 ^{0}C;
  Stor. temp.   -30 ^{0}C … +80 ^{0}C;
  Humidity   95% rel. at +25 ^{0}C
Electrycal
  Voltage   +8. . . +18 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 120 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.

Colour	W2 / W3 / W4 / WS	RS232	TouchMemory
	Assignment		
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	Hold	Hold

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

Type of interfaces

The proximity reader is intended to apply in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42, Wiegand with automatic choice** 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 more than one reader is used in the system, place them not closer than 50 cm one from another, otherwise a reading distance will be decreased.

- 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.

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

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* Not for RS232 interface
** For FSK cards only

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.

❶ 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:

	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

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

# of byte	0	1	2	3	4
Destination	07h	00	00	Control byte	00

Control byte:

bit	7	6	5	4	3	2	1	0
Destination	LED blinking		0	0	LED lit		buzzer	
	red	green			red	green	pulsatory	uninterruptedly

1 – corresponds LED or buzzer switched on. 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 send as:
23h, 37h, 3Eh, 30h, 30h, 30h, 34h, 36h, 30h, 3Ah, 3Ah, 3Bh, 0Dh.

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