Proximity reader

iPR-A5RSx, iPR-A5W2x, i PR-A5W3x, iPR-A5W4x, PR-A5WSx, iPR-A5TMx

user manual

Introduction

The proximity reader with build-in keypad is intended for being applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42, Wiegand with automatic choice or TouchMemory interface.

The interface type may be changed by special PC programm. If you need to change the interface type please call your distributor.

The reader is putted in elegant plastic case with membrane keypad and two color LED indicators on front pannel.

Types of tags

The reader operates with amplitude modulation (ASK) proximity cards. Type of tag is selected by programmator.

Benefits

Case	
Material	ABS plastic
Dimensions	115 x 72 x 19 mm
Weight	120 g
Ambient Conditions	
Oper. temp.	-20 ^{0}C ... +55 ^{0}C;
Stor. temp.	-30 ^{0}C … +80 ^{0}C;
Humidity	95% rel. at +25 ^{0}C
Power supply	
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. This parameter is valid for power supply voltage range +8 to +18 VDC and ripple up to 150 mV_{p-p}.

Wiring

The reader is equipped with 8-wire interface.

	W2 / W3 / W4 / WS	RS232	TouchMemory
Colour	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

Table . The wires assignment.

AWG22 multiwire signal cable is recommended. In this case maximum cable length up to 100 meters can be obtained*.

Type of interfaces

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Mounting

Mount the reader on the wall close to the lock.

- Do not place the reader on metal surfaces,since it causes to reading distance decreasing.
- If more than one reader is used in the system, place them at 50 cm minimal distance from one another, otherwise a reading distance will be decreased.

Fix back plate on the wall on the place where the reader will be mounted. Prepare all wires for connection and connect the wires with the reader according to Table 1 and User Manual of the controller to be utilized.

The Reader Operation

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»).

Next card reading is available after 0.75 sec if the previous card was removed from reader sensing area.

Code Entering

Push the **[#]** button to finish the code entering. Push the **[*]** button to cancel wrong code. Pushing of every button is indicated by buzer sound.

Hold Mode

* Not for RS232 interface
** For FSK cards only

Reader turns into hold mode If 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 Indication

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

Wiegand or TouchMemory Interface

LED and buzzer switching on is possible automaticly or by grounding of the corresponding wire according to the table 2.

Table 2. Annunciation mode:

Data transmission from reader complies with standard Wiegand26, Wiegand37, Wiegand42 or TouchMemory protocols. Protocol for TouchMemory interface from family 01 (to satisfy the requirements DS1990).

Interface RS232

	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

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	–	green LED blinking	–	–	buzzer pulsatory	–	buzzer 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
Read of card	23h	data	checksum	0Dh
Read of PIN code	21h	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 low nibbles of bytes from 1 to 10. High nibble of 1 to 10 bytes always must be 3h.

If codelength is shorter than maximal one (depends on interface type) liding hex F will be added.

Example: Card code 7E000460AA will be send as:
23h, 37h, 3Eh, 30h, 30h, 30h, 34h, 36h, 30h, 3Ah, 3Ah, 3Bh, 0Dh.

Example: Pin code 1234 will be send as:
21h, 3Fh, 3Fh, 3Fh, 3Fh, 3Fh, 3Fh, 31h, 32h, 33h, 34h, 34h, 0Dh.

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