

# iPR-3 proximity reader

## User manual

### Introduction

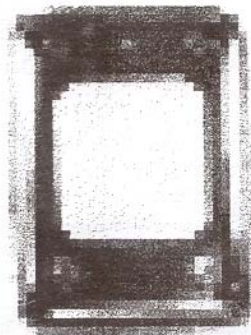
The proximity reader iPR-3 is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37 or Wiegand 42 interface.

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 a hermetic vandal-proof case made of polished stainless steel with LED indicator on the front cover.

### Types of cards

Crow Electronic Engineering manufactures readers operating with amplitude modulation (ASK) proximity cards and tags.



### Benefits

#### Case

Material	1.5mm thick stainless steel
Dimensions	110 x 80 x 15 mm
Weight	150 g

#### Ambient Conditions

Oper. temp.	-35 °C ... +60 °C;
Stor. temp.	-30 °C ... +80 °C;
Humidity	100% rel. at +25 °C

#### Electrical

Voltage	+9...+16 VDC
Current	up to 50 mA
Max current	up to 80 mA
Voltage ripple	up to 500 mV <sub>p-p</sub>

### Distance of reading

Typical reading distance is 35-40 mm and depends on tag type used with it. This parameter is valid for power supply voltage range from +13.5 VDC and ripple up to 150 mV<sub>p-p</sub>.

## Wiring

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

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

Table 1. The wires assignment.

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 or Wiegand 42 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.
- Drill 4 openings 35mm deep
- 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 transfer and Annunciation»).

Repeated reading will be available after 0.8 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 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 transmissions from reader comply with standard Wiegand26, Wiegand37, Wiegand42 protocols.

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 blinks	–	red uninterruptedly	–	–	–
byte 2	green stedy	–	green blinks	–	–	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
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.

### Limited Warranty

Crow Electronic Engineering 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, Crow Electronic Engineering 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 damaged incurred in shipping or handling, or damaged due to causes beyond the control of Crow Electronic Engineering 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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