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# 13.56MHz User Manual

## 1. Overview

KR6\*\*D Series 13.56MHz is a non-contact RFIC card reader that is developed based on the ISO/EM4001 international standard protocol. It adopts the high-performance RF card reader circuit designed by ZKTeco. It is characterized by the high integration degree, strong anti-interference capability, compact size, stable performance, and cost effectiveness. KR6\*\*D Series provides the Wiegand 34/66 communication interface, and is applicable to various RF identification fields, such as the access control, attendance, charging, anti-theft, and patrol systems.

## 2. Features

- The card reader is equipped with a card-reading antenna that works at 13.56MHz.
- The effective distance ranges from 0 to 5cm, depending on the working environment and card type.
- The data receiving time is less than 80ms within the effective distance.
- The card reader adopts the single +12 VDC power supply, and the operating current is less than 100mA.
- The data is output in the standard Wiegand34 bits format by default. The format can be converted between Wiegand34 and Wiegand66.
- The card reader is produced using the fully closed rubber injecting operation to achieve the waterproof and moisture-proof effects.
- The effective distance is associated with the voltage of the power supply, used IC cards, and operating environment.

## 3. Wire Function Description

Red wire: VCC; +12V

Black wire: GND

Green wire: Wiegand D0

White wire: Wiegand D1

Grey wire: Green LED

Purple wire: Beeper

Yellow wire: W34/W66 grounding

## 4. Specifications

### (1) Limit Parameters

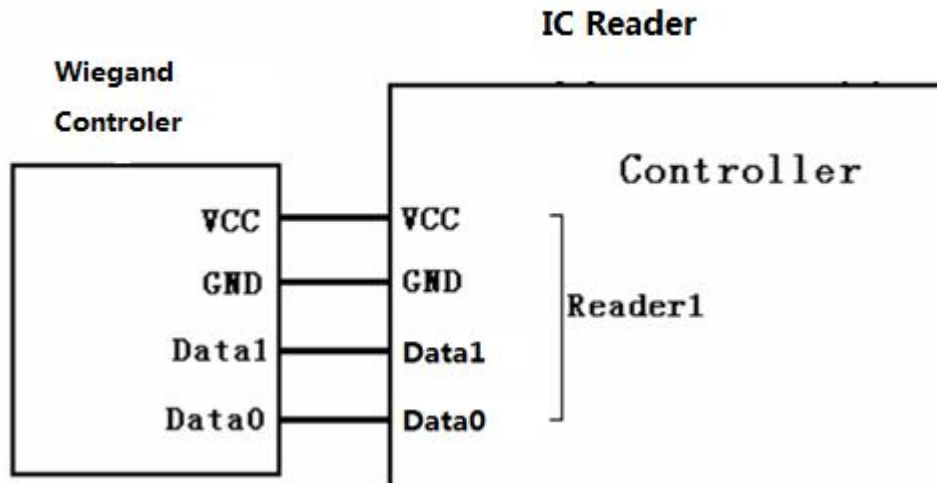
Item	Value	Unit
+12V (Vcc)	12.5	V
Data0, I0/Clock (ICK)	←20	mA
Data1, I1/Data (IC)	←20	mA
Hold, IH/Card Present (ICP)	←25	mA
Antenna (IAN)	←43	mA
Operating temperature (TOPR)	-10 to 70	→C
Storage temperature (TSTR)	-55 to +125	→C

### (2) Electrical and mechanical parameters (T<sub>A</sub> = 25→, V<sub>cc</sub> = 12V unless otherwise specified)

Item	Minimum	Typical	Maximum	Unit
+12V, Vcc	7	12	14	V
Operating current (Ic)		20	50	mA
Operating frequency (FRES)	13.52	13.56	13.58	MHz
Effective distance (D*)	20	35	45	mm
Decoding time (TDEC)	65	100		ms
Data0, Data1, Hold/ata, Clock, Card, Present end output high level (VoH)	2.4 (IoH=80uA), 0.75Vcc (IoH=30uA) 0.9Vcc (IoH=12uA)			V
Data0, Data1, Hold/ata, Clock, Card, Present end output low level (VoL)	0.5 (IoL=20mA, Vcc=5V, IoL=20mA, Vcc=3.3V)			V
Dimensions (L x W x H) (excluding the wire length)	86 x 86 x 16 (tolerance: ±3mm)			mm

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## 5. Wiegand Connections



## 6. Precautions

1. The operating frequency of the card reader is 13.56MHz. Therefore, interference frequency ranging from 13MHz to 15MHz cannot exist on the site where the card reader is installed.
2. To prevent emission magnetic fields of card readers from affecting each other, the installation distance between every two card readers must be greater than 10 cm.

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## Attachment 1

"Hereby, ZKTECO CO., LTD. declares that this Card Reader is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Warning:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

"This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

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This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body."

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