

# User Manual

## UHF5 Pro/UHF10 Pro Reader

Date: October 2020

Doc Version: 1.0

English

Thank you for choosing our product. Please read the instructions carefully before operation. Follow these instructions to ensure that the product is functioning properly. The images shown in this manual are for illustrative purposes only.



For further details, please visit our Company's website [www.zkteco.com](http://www.zkteco.com).

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The product will be updated from time to time without prior notice. The latest operation procedures and relevant documents are available on <http://www.zkteco.com>

If there is any issue related to the product, please contact us.

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To know more about our global branches, visit [www.zkteco.com](http://www.zkteco.com).

## About the Company

ZKTeco is one of the world's largest manufacturer of RFID and Biometric (Fingerprint, Facial, Finger-vein) readers. Product offerings include Access Control readers and panels, Near & Far-range Facial Recognition Cameras, Elevator/floor access controllers, Turnstiles, License Plate Recognition (LPR) gate controllers and Consumer products including battery-operated fingerprint and face-reader Door Locks. Our security solutions are multi-lingual and localized in over 18 different languages. At the ZKTeco state-of-the-art 700,000 square foot 1509001-certified manufacturing facility, we control manufacturing, product design, component assembly, and logistics/shipping, all under one roof.

The founders of ZKTeco have been determined for independent research and development of biometric verification procedures and the productization of biometric verification SDK, which was initially widely applied in PC security and identity authentication fields. With the continuous enhancement of the development and plenty of market applications, the team has gradually constructed an identity authentication ecosystem and smart security ecosystem, which are based on biometric verification techniques. With years of experience in the industrialization of biometric verifications, ZKTeco was officially established in 2007 and now has been one of the globally leading enterprises in the biometric verification industry owning various patents and being selected as the National High-tech Enterprise for 6 consecutive years. Its products are protected by intellectual property rights.

## About the Manual

This manual introduces the operations of UHFS Pro/UHFIO Pro Reader.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

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## 1 Overview

UHF5 Pro/UHF10 Pro is the ZKTeco's third generation UHF reader which has a more stable performance, longer reading distance and faster recognition speed. It is equipped with a passive UHF card, which could be widely used in Vehicle management and Personnel management applications. The product also meets the CE, FCC technology requirements, and yet to obtain the CE, FCC, and other security certifications.



**UHF5 Pro**



**UHF10 Pro**

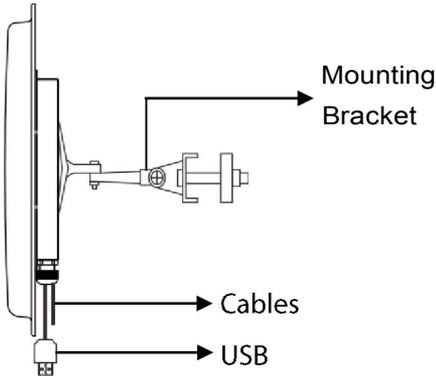
### **Antenna operating frequency**

- European Standard: 865MHz-868MHz
- American Standard: 902MHz-928MHz (optional)

### **Card reading range**

- UHF5F / E hand-held test up to 10m, driving car test around 4m
- UHF10F / E hand-held test up to 20m, driving car test around 8m

## 2 Side View & Wiring



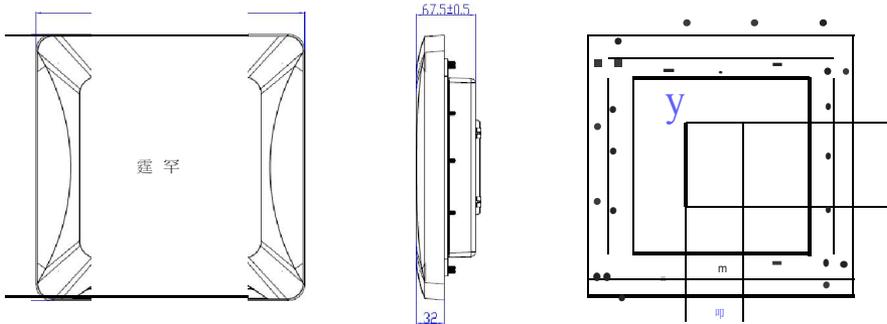
No.	Colour	Connection
1	Red	DC +12V
2	Black	
3	Green	Wiegand DO
4	White	Wiegand D1
5	Purple	Trigger Point
6	Gray	GND
7	USB	Connect to PC
8	Brown	RS485+
9	Orange	RS485-

### 3 Specifications

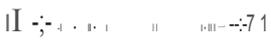
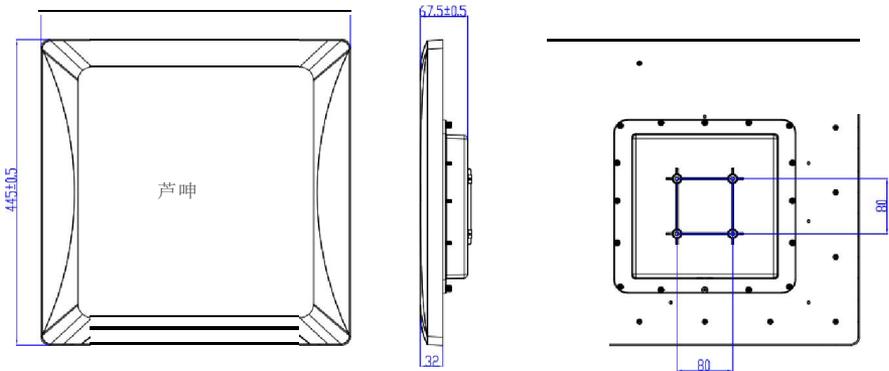
Model	UHF5E /F Pro	UHF10E/F Pro
Reading Distance	2 to 8 meters (Hand-held test) Actual scenario test is around 4m	10 to 20meters (Hand-held test) Actual scenario test is around 8m
Antenna Gain	9dBi	12dBi
Dimension	308.5*308.5*67.5 mm	445*445*67.5 mm
Weight	1.8kg	3kg
Power	1.2 to 4.2 W	1.2 to 4.5 W
Frequency	E: 865MHz to 868MHz F: 902MHz to 928MHz (supports adjustment)	
Communication interface	Wiegand; RS485; USB Configuration parameters (Wiegand, RS485 requires one of the two options)	
Interface Protocol	EPC global UHF Class 1 Gen 2 / ISO 18000-6(	
Working Mode	Read Always (Default) & Read by Trigger	
Output Power	19dBm to 30dBm	
Protection Class	IP66	
Working Voltage	DC 9 to1SV	
Working Temperature and Humidity	-20°(to 65°(, <85%	
Storage Temperature and Humidity	-20°(to 80°(, <85%	
RS485 Communication	Optional baud rate (9600, 19200, 38400, 57600, 115200). The default is 115200	

# 4 Dimensions

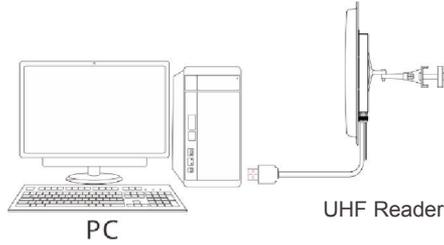
UHFS E/F Pro:



UHF 10E/F Pro:



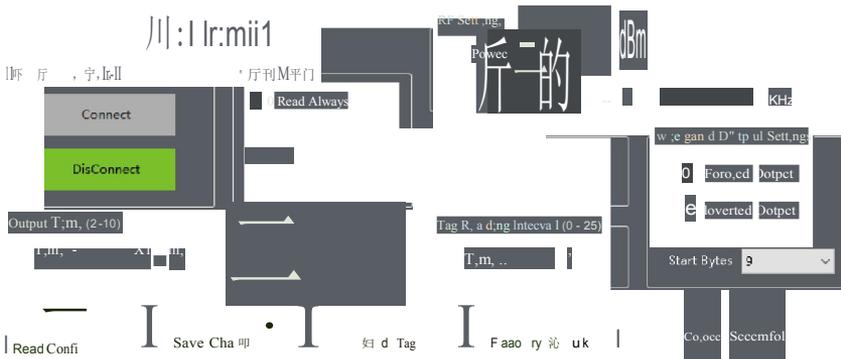
## 5 Software Configuration



### 5.1 Introduction

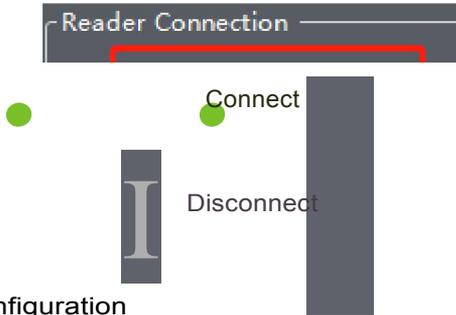
#### 5.1.1 Main Interface

Take the operation of the American standard reader as an example:



### Reader Connection

Click Connect to connect the Reader, and click Disconnect to disconnect the Reader.



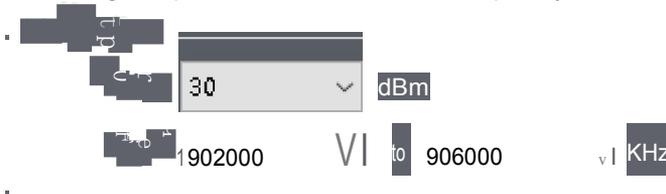
### Work Mode Configuration

Click Read Always to make the Reader always in the read status. Click Read by Trigger to enable the reader to read only after it is triggered.



### RF Settings

The RF Settings helps to set the Power and Frequency values.



### Buzzer

Select the Buzzer check box to enable the Buzzer.



### Wiegand Output Setting

The Wiegand Output Settings consist of Forward Output and Inverted Output. Click Forward Output to read the card number in the partition in the progressive order, and click Inverted Output to read out the card number in the partition in the reverse order (customers need set).

Wiegand Output Settings

Forward Output

Inverted Output

Start Byte

### Output Duration Setting

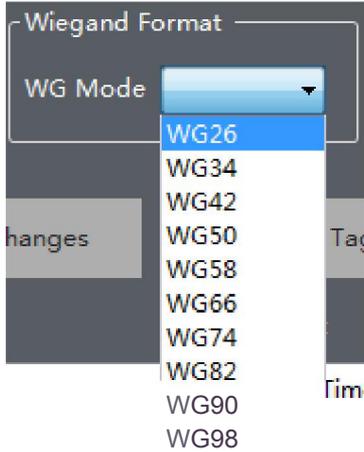
The time of continuous output signal of the reader can be set, and the maximum setting time is 1s.

Output Time (2-10)

Time -  X 100ms

### Wiegand Format Setting

The default Wiegand format is WG26, and it can be set as WG34, WG42, WGSO, WG58, WG66, WG74, WG82, WG90, WG98.

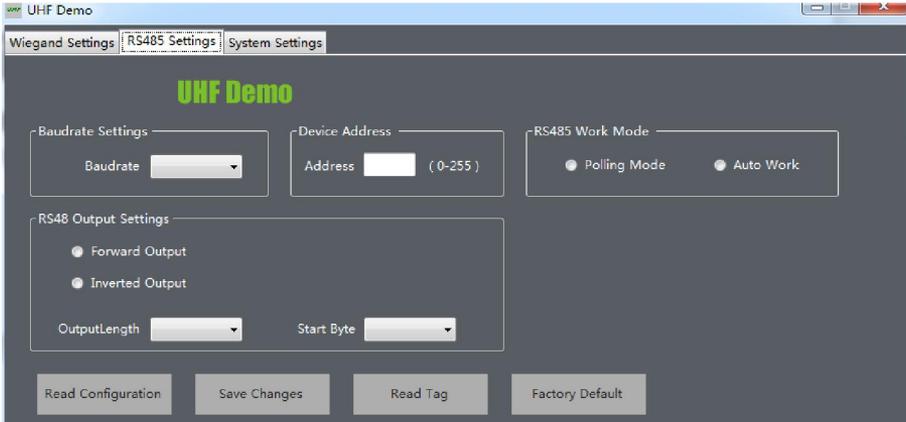


### Card Reading Interval Setting

You can set the card reading interval to prevent the repeated card reading.



### 5.1.2 RS485 Setting Interface



The controllers supported by default are inbio260 and inbio460.

#### Baud Rate Setting

The default Baud rate is 96000 and it can be adjusted as per the requirements.

Baudrate Setting

Baudrate-

#### Device Address Setting

The Device Address Setting is used to distinguish the readers which are installed in different locations.

Device Address

Address- (0-255)

### RS485 Working Mode

Select Polling Mode to send a command to search for cards, and the reader will reply to the corresponding data after receiving the card search command. Select Auto Work to read the card and automatically upload the data to the Controller.

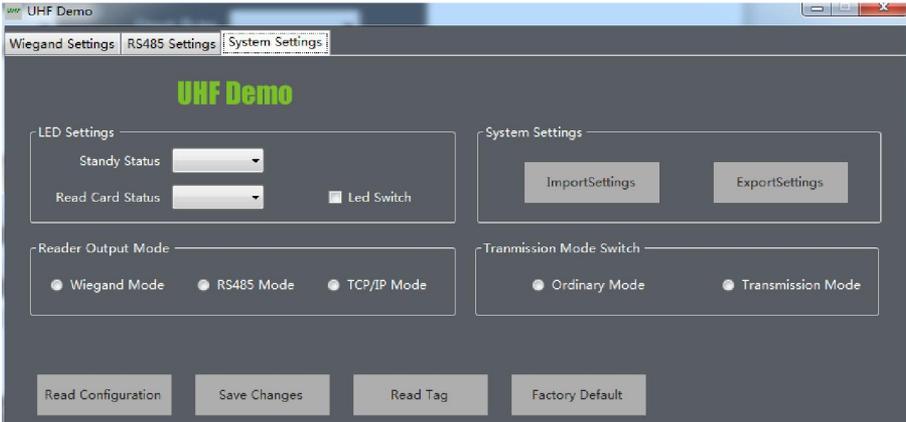


### RS485 Output Settings



The RS485 Output Settings consist of Forward Output and Inverted Output. Click Forward Output to read the card number in the partition in the progressive order, and click Inverted Output to read out the card number in the partition in the reverse order.

### 5.1.3 System Settings



#### LED Light Setting

The LED indicator color can be set in the Standby Status and the Read Card Status. There are seven colors to choose.

#### LED Settings



#### System Settings



Set the location of the data import and export.

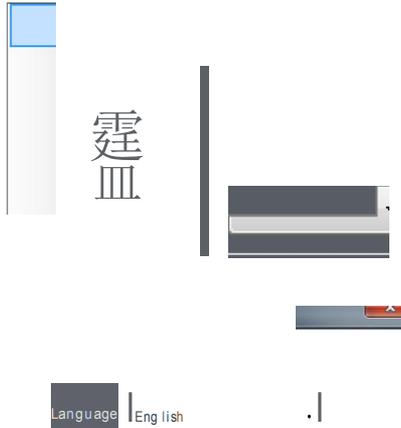
### Card Reader Output

There are 3 Card Reader output modes namely Wiegand Mode, RS485 mode and TCP/IP mode.

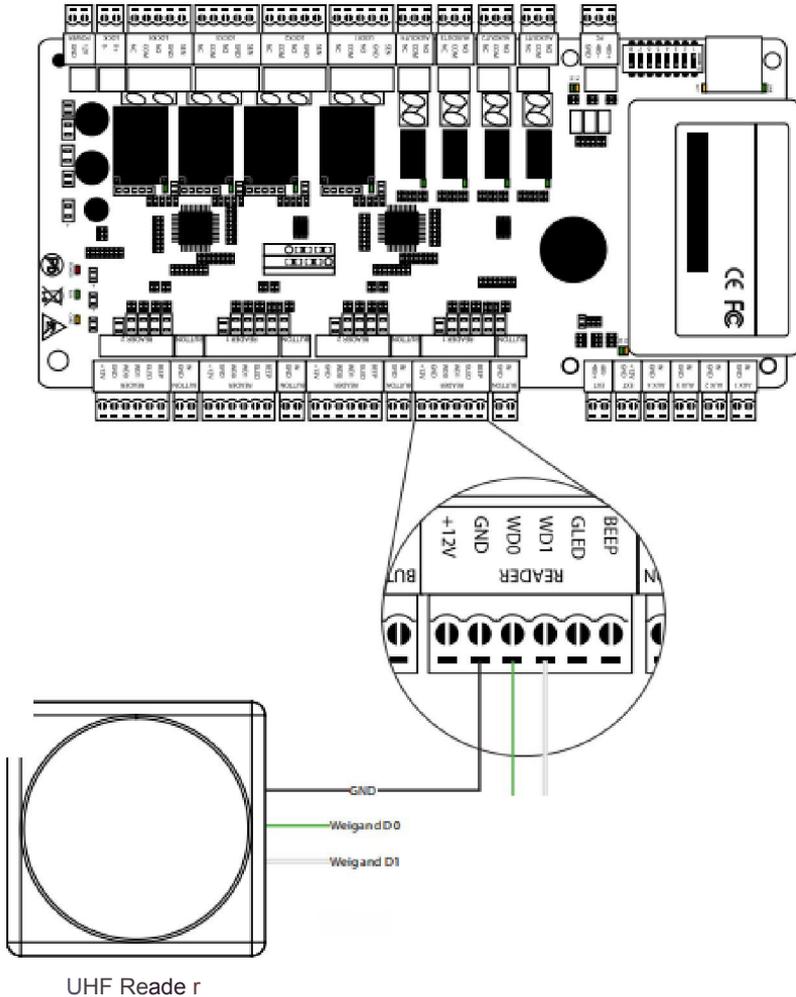


### Language Settings

Right click in the blank area of the Demo interface, a pop-up appears as shown below, click Language Settings to select the language.

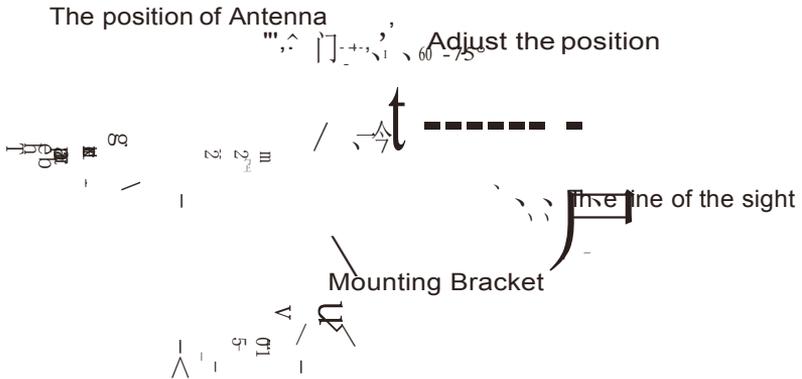


## 6 Access Controller Connection



## 7 Installation Procedure

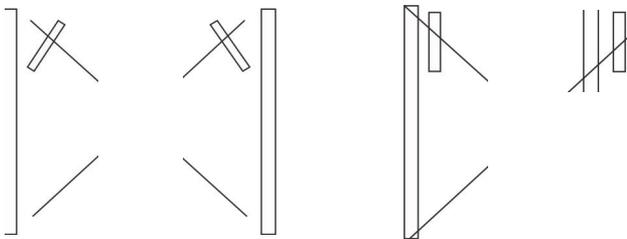
1. Please install the directional antenna with a lower elevation angle of  $60^{\circ}$  to  $75^{\circ}$  to suit the correct line of sight.



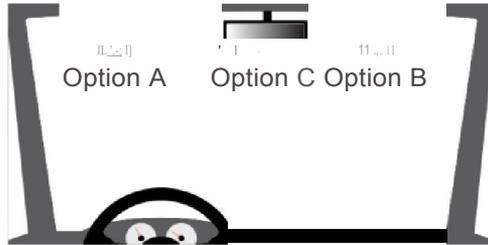
**Note:**

Please install the reader as shown in the above picture. The facing direction of the reader and the travel direction of the vehicle must be in a straight line. The distance between the reading head and the parking barrier must be maintained at 50cm or more.

2. Avoid installing the reader opposite to each other.



- 3. The position of the tag/card in the vehicle must be as follows:



- 4. The reader detection distance may vary depending on climatic conditions such as rain, snow or wind.



- 5. The Reader should be away from any strong magnetic field while working.



UHF1-  
Tag1  
card



Operating frequency: 840 to 960MHz  
Data Storage: 32-bitTID, 64-bit Unique TID,  
96-bit EPC, 512-bit User.  
Supported Protocol: EPC global class 1  
Gen2 / 1S018000-6C

Product size: 85.6x54.0x0.8mm

UHF  
Parking  
Tag  
Parking  
lot label



Operating frequency: 840 to 960MHz  
Data Storage: 32-bitTID, 64-bit Unique TID,  
96-bit EPC, 512-bit User, etc.

Support Protocol: EPC global class 1 Gen2/  
1S018000-6C

Product size: 100.0x23.2x0.4mm

## 8 Wiring Diagram

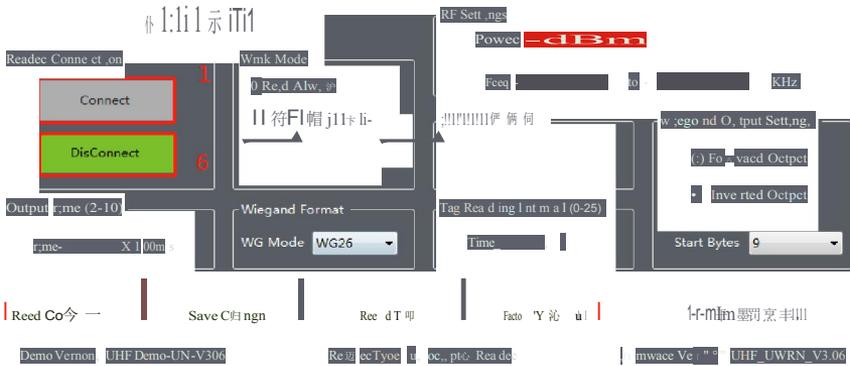


## 9 FAQ

### ➤ **What to do if the recognition distance of the reader is too close?**

Try the following possibilities:

- Connect the demo, and then adjust the power to the maximum.



- Check whether there is any interference of the adjacent reader and power station magnetic field near the reader.
- Check whether the reader is installed correctly and whether the tag is operated correctly.
- Replace the tag or reader.

▶ What can be done if the reader doesn't read the card?

Try the following possibilities:

- When the reader is connected to DEMO, you need to click Disconnect so that it could read the card again.
- Connect the Demo to check whether the manual card reading is normal. If the manual card reading does not respond, there is a problem with the reader. If the manual card reading fails after the factory reset, replace the reader.
- Determine whether the tag is our product, replace the tag test.

► What to do if the barrier doesn't open after reading the card?

Try the following possibilities:

- Short circuit the NO and COM terminals of the reader, check whether the switch is open. If it is not open, check whether the connection between the reader controller port and the barrier port is correct.
- Check whether the barrier is open when the UP and GND terminals are short circuited. If not, the barrier is faulty.
- Check whether the tag has registered the information on the software and the data is synchronized to the reader. When swiping the card, pay attention to whether the controller has the sound of relay jumping, and whether the software has the normal door opening record display. If so, check whether the output port of the controller relay signal is connected to the brake in a wrong manner or connected to another output port.

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
- Changes or modifications not expressly approved by the party responsible for compliance

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could void the user's authority to operate the equipment.

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.

RF Exposure Warning Statements:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with minimum distance 20cm between the radiator & body.

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