Watch*NET* Access Integrated Security Management Software

WAC 1D2T Micro Single Door Time Attendance Controller

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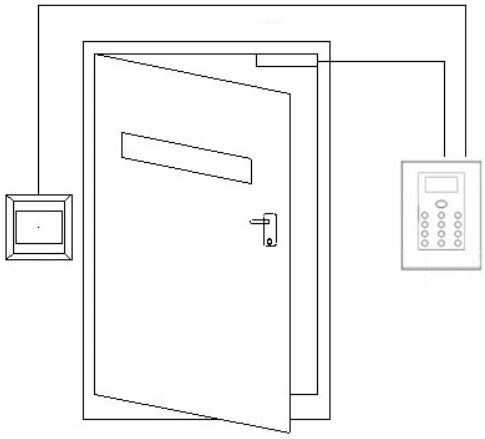
Revision History

Revision	Date	Author	Description of Changes
1.0	10/28/2013	Pradeep Kumaran	Manual Created.
1.1	11/30/2013	Octavio Colantonio	Updated Screen shoots.
1.1	03/24/2015	Peter Punzalan	Updated Manual

Chapter1 - Introduction

1.1 Summary

WAC 1D2T MICRO is a new outstanding T & A standalone controller with an OLED screen developed by WATCHNET. The WAC 1D2T MICRO can work together with a fingerprint reader as T&A controller. The employees will need to present their fingers on the Fingerprint Reader to complete attendance. The OLED screen will display time and staff ID information. This system greatly improves the T&A simplicity and offers cost saving on traditional tags. When the WAC 1D2T MICRO works as an access controller the traditional keys are no longer needed. Employees can enter their space by flashing authorized cards. The WAC 1D2T MICRO can by itself control a door and both in and out readers. At least one reader is needed for one side and the other side can be controlled either by a reader or a REX Button. This system provides a convenient and secured access environment and it also makes it possible for managers to verify the attendance. The WAC 1D2T MICRO is compatible with a big range of applications including, building management, enterprise management, government, military, prison etc..



Model Definition:

WAC 1D2T MICRO/E------Built in EM Card Reader

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Supported Card Type:

E：EM Card； Exp EM4100， TK4100 Series.

H：HID Card； Exp: 1326、1386 Series.

M: Philips S50， Mifare-1 Compatible

1.2 Features

1. The WAC 1D2T MICRO is a new generation product comprising of an integrated keypad with text display and a single door control and T&A. Its 3 flexible uses are as below.
    - T&A：The WAC 1D2T MICRO can directly communicate with host PC via RS485 or TCP/IP managed by the WatchNET Access Software.
    - Single Door Controller：The WAC 1D2T MICRO can work as an access controller with external readers for single door In/Out control.
    - Wiegand Reader with OLED Display：The WAC 1D2T MICRO can work as a reader which outputs wiegand26 or wiegand34 signal while the OLED screen shows time and card number.
2. 1 Rex Button output, 1 magnetic contact input, 1 Wiegand 26/34 input/output, 2 auxiliary inputs, 2 relay outputs, 1 RS485 interface, 1 door bell interface.
3. Can connect to external Wiegand26/34 reader（keypad reader included）， Entrance/exit can be controlled by "*Card/PIN*" or "*Card + PIN*".
4. Customized OLED LOGO display, menu with backlight, showing the name and card number when reading a card.
5. Network (127 for RS485, no limit for TCP/IP), offline mode available. However need to configure via the keypad before working offline.
6. The system can register 100 pcs Wiegand26/34 RFID cards and store 200000 events when it's offline mode. When it comes to online mode, all data can be uploaded to host PC and 30000 cards can be registered.
7. Remote door control available, multiple incidents alarm functions, exp as door open timeout, door close timeout, intrusion alarm, duress alarm, tamper alarm and fire alarm.
8. Specifications

    Work Mode：
    - Card Mode；
    - PIN Mode；
    - Card/PIN Mode；
    - Card + PIN(interval time 8 sec)

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Supported User Number：30000 pcs

PIN User Number：10

Communicate Frequency：

125KHZ:

E: EM；

13.56MHZ:

M: Mifare；

Read Range：3-15CM

Outputs：NC/NO， 30VDC， 5A

Power Supply：12VDC±10%， 200MA

Dimension：117mm (H) x 86mm (W) x 22mm (D)

1.3 Application Mode

3 Application Modes：

- Standalone
- Outdoor external reader, indoor WAC 1D2T MICRO
- Indoor external reader, outdoor WAC 1D2T MICRO

Chapter2 Wiring Diagram

2.1 WAC 1D2T MICRO Appearance

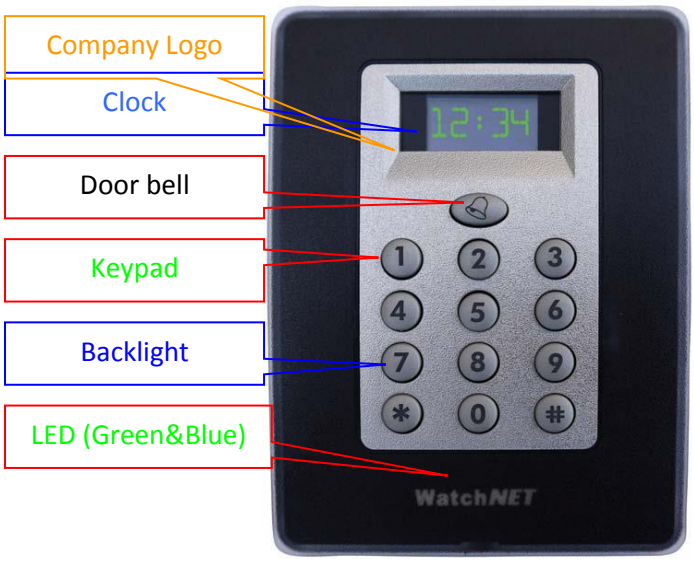

Figure 2-1

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LED:

- Blue LED：Power indicator
- Green LED：Access Granted indicator（Relay turned on indicator）

Keypad:

NO.	Key	Description	NO.	Key	Description
1	1	Numeral 1	7	7	Numeral 7
2	2	Numeral 2	8	8	Numeral 8
3	3	Numeral 3	9	9	Numeral 9
4	4	Numeral 4	10	0	Numeral 0
5	5	Numeral 5	11	*	Cancel / Start
6	6	Numeral 6	12	#	Enter / Confirm

2.2 Wiring Diagram

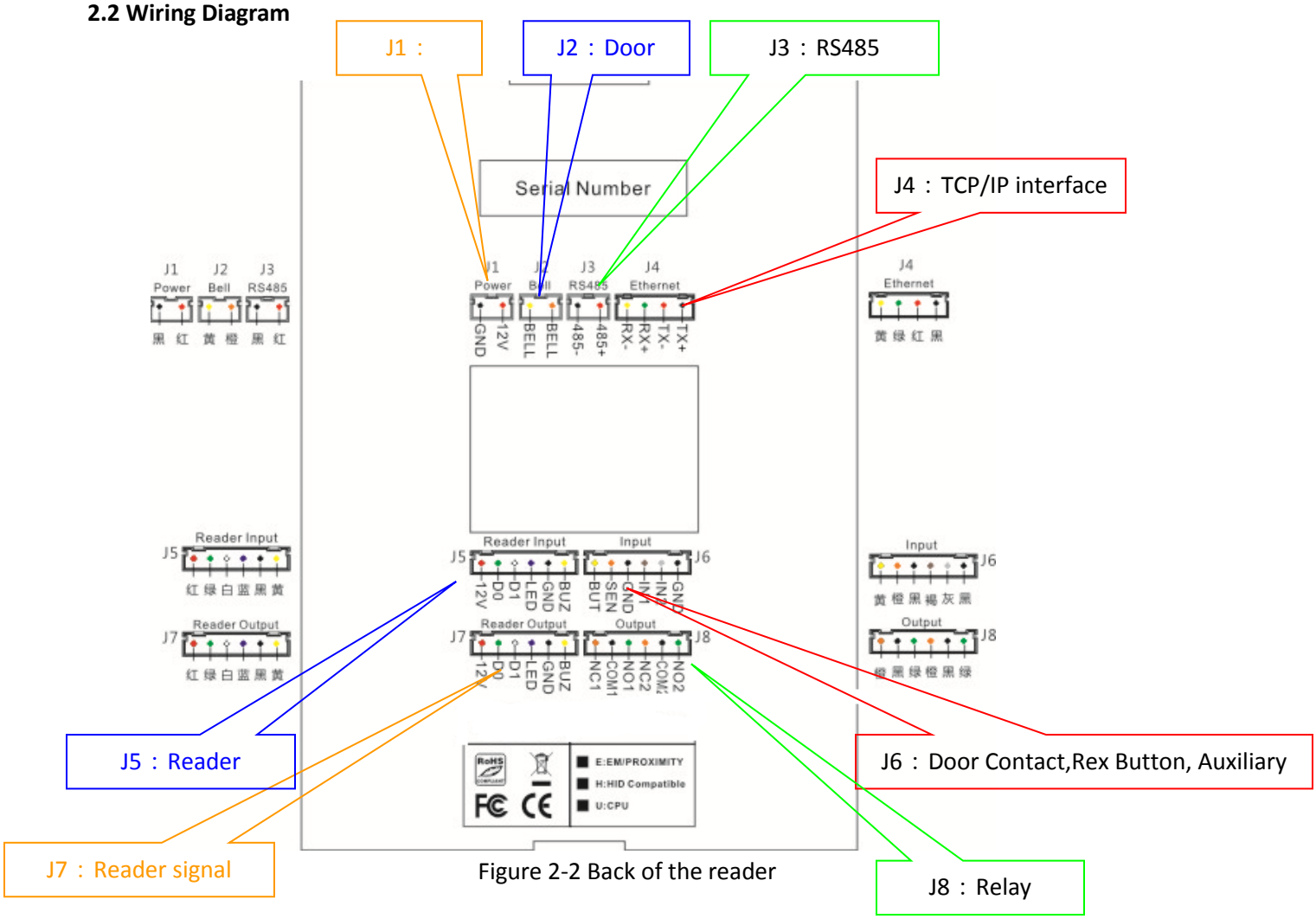

Figure 2-2 Back of the reader

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TCP/IP interface, as shown below：

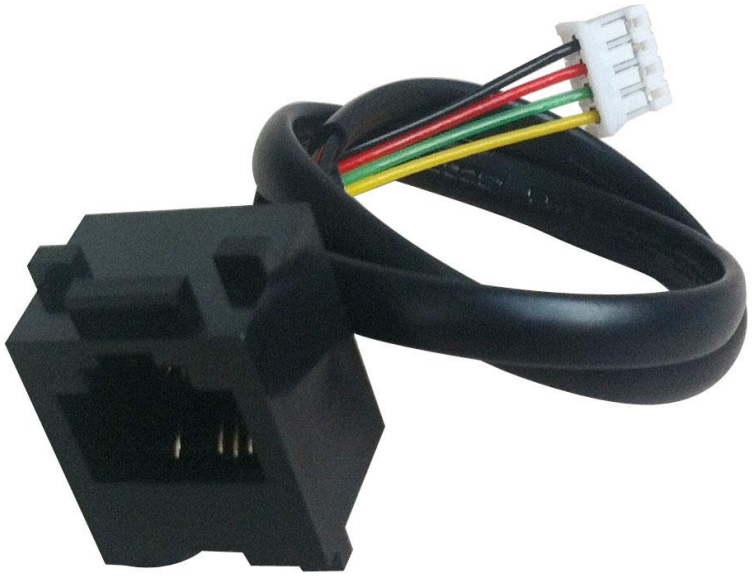

Figure 2-3

Icon	NO	Connection	Definition	Icon	NO	Connection	Definition
J1	1	GND	Power supply	J6	17	BUT	Magnetic, Rex Button, Auxiliary output
	2	12V			18	SEN	
J2	3	BELL	Door bell		19	GND	
	4	BELL			20	IN1	
J3	5	485-	485 interface		21	IN2	
	6	485+			22	GND	
J4	7	RX-	TCP/IP interface	J7	23	12V	Reader signal output
	8	RX+			24	D0	
	9	TX-			25	D1	
	10	TX+			26	LED	
J5	11	12V	External reader interface		27	GND	
	12	D0			28	BUZ	
	13	D1		J8	29	NC1	Relay output
	14	LED			30	COM1	
	15	GND			31	NO1	
	16	BUZ			32	NC2	
					33	COM2	
					34	NO2	

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Wiring Description：

J1: Power Supply

- ✓ 12V：DC 12V Positive
- ✓ GND：Ground

J2: Door Bell

- ✓ Normally, J2 outputs open signal if  is not pressed.
- ✓ If door bell is used,  is pressed and J2 will outputs close signal to drive door bell rings.

J3: 485 Interfaces

- ✓ An IC232 or RS485HUB is needed to connect host PC.
- ✓ Customer can set all configurations when connected to host PC. Moreover user authorization and exporting card events can also be done via AccessWatch3000.

J4: TCP/IP Interfaces

- ✓ Available to use a switch or directly connect to host PC via Ethernet port.
- ✓ Customer can set all configurations when connected to host PC. Moreover user authorization and exporting card events can also be done via AccessWatch3000.

J5: External Reader Interfaces

- ✓ 12V：External reader power supply (Positive)
- ✓ D0：Wiegand input
- ✓ D1：Wiegand output
- ✓ LED: Indicator connector
- ✓ GND：Ground.
- ✓ BUZ: Buzzer connector

J6: Door Contact, Rex Button, Auxiliary Input

- ✓ BUT： Rex Button connector（GND for the other side）.
- ✓ SEN： Magnetic switch connector（GND for the other side）.
- ✓ GND： Negative（Public side）.
- ✓ IN1： Auxiliary input 1.
- ✓ IN2： Auxiliary input 2.

J7: Built-in Reader Output

- ✓ 12V：Positive
- ✓ D0：Wiegand output 0
- ✓ D1：Wiegand output 1
- ✓ LED: Indicator connector
- ✓ GND：Negative（Public side）.
- ✓ BUZ：Buzzer connector

J8: Electronic Lock、Relay Output

- ✓ Based on customized lock model.

2.3 Lock Wiring Diagram

J4: Relay Output（Lock Control）

As shown below.

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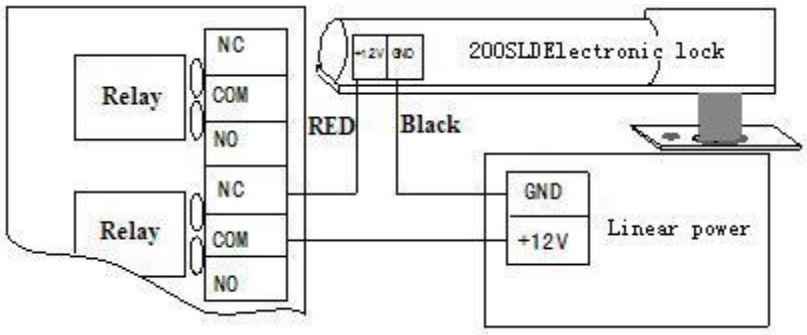

Figure 2-4 Electronic Strike Lock

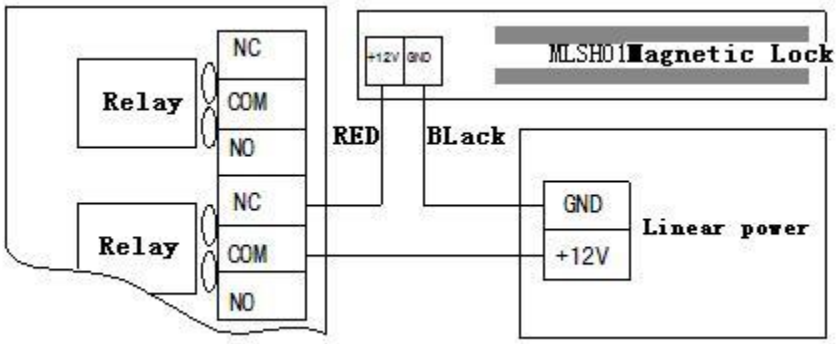

Figure 2-5 Magnetic Lock Fail safe

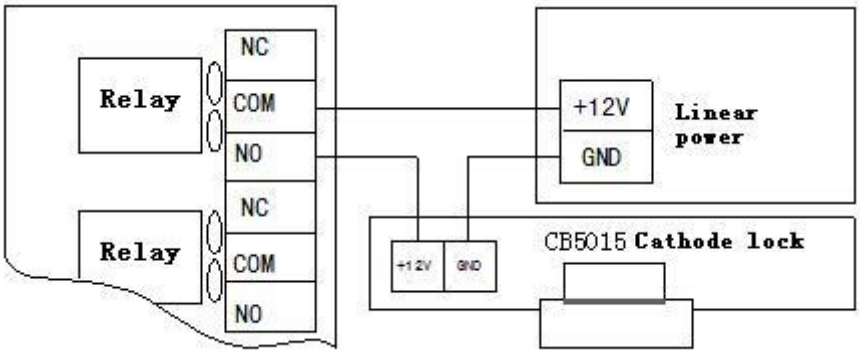

Figure 2-6 Cathode lock Fail secure

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2.4 RS485 Net Bus

The WAC 1D2T MICRO can communicate via half-duplex RS485 bus and up to a 1200m communication distance. Terminals use series connection.

Please make sure power supply is in off state before wiring. This helps to avoid any damage that might be caused to the device.

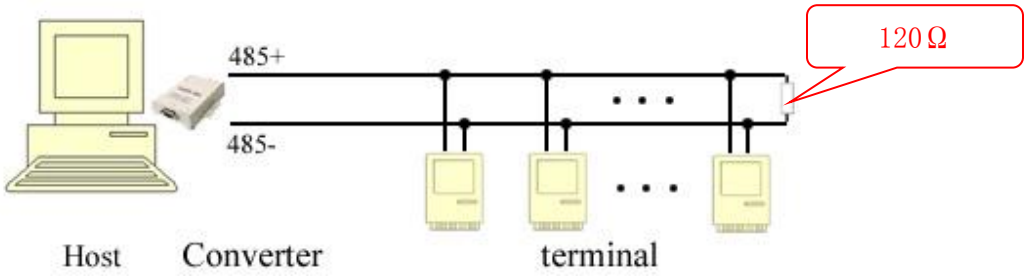

Figure 2-7

- **Twisted-pair：Twisted-pair are used to connect controller to controller. No GND is needed.**
- **Series connection：Terminals are connecting via series connection. A multi-bus RS485HUB is needed if customer needs parallel connection.**
- **RS485 Single Point Ground：If controller transmission line is with shielding or needs ground line, then all controllers' transmission line can be grounded in either controller. Please note do not gather all metal side to the GND of controller.**
- **Terminal Resistance：Series connected at the end of the circuit.**

2.5 TCP/IP Network

WAC 1D2T MICRO TCP/IP network

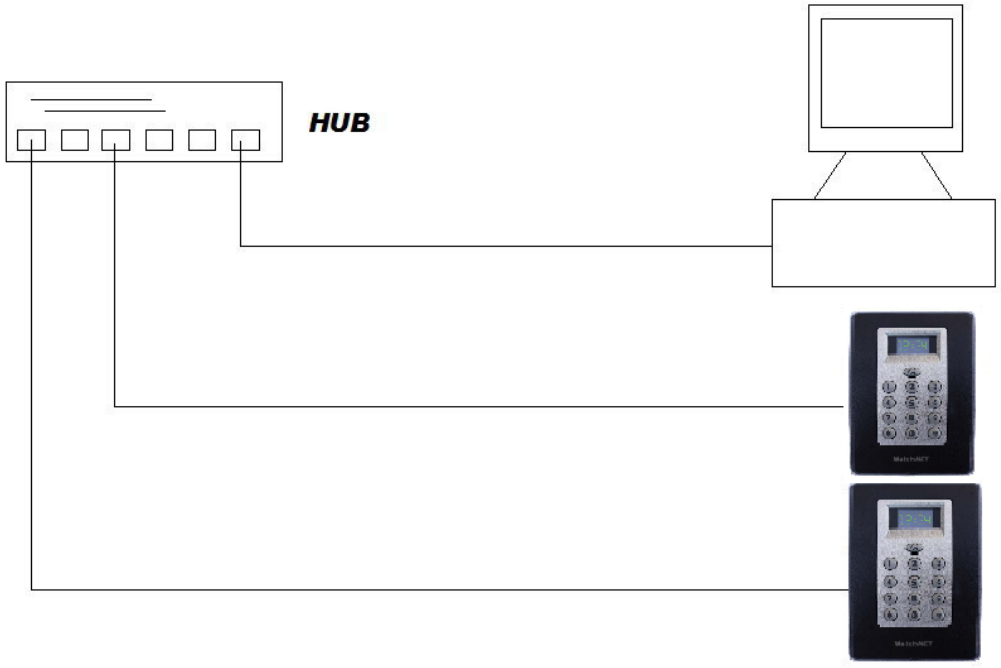

Figure 2-8

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TCP/IP Connector

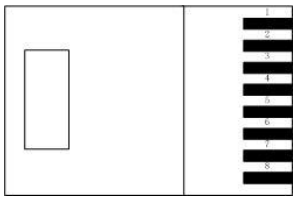

Figure 2-9

RJ45 NO.	Connection
1	TX+
2	TX-
3	RX+
6	RX-

Sheet 2-2

Normal net cable （to switch）

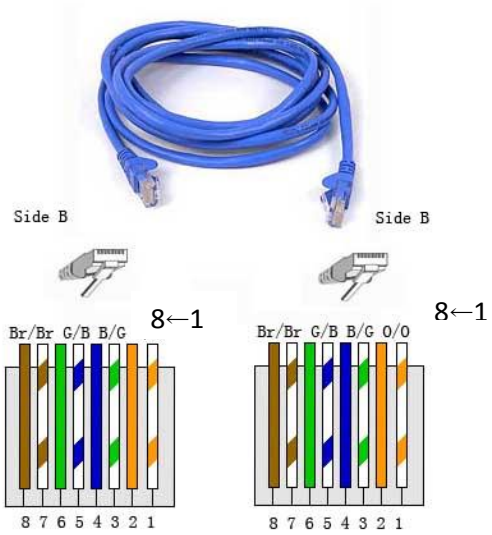

图2-10

Crossed cable （to PC）

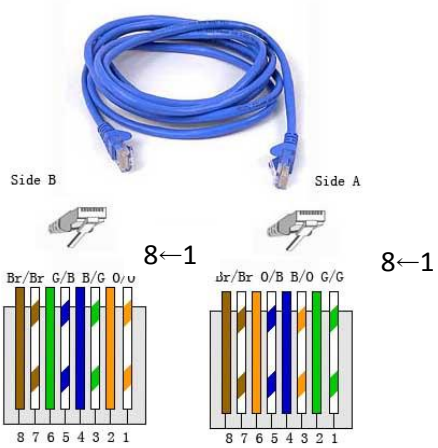

Figure 2-11

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Chapter3 Instructions

User Management, PIN management, Work mode and Time set are configured in the manage menu. Menu structure is shown below.
Press * *39 #* to enter manage menu when idle. In the main menu, "*" works as "*cancel*", "*#*" works as "*confirm*", "*3*" works as "*Up*", "*9*" works as "*down*".

3.1 Clock Configuration

3.1.1 Edit Time

1. Press * *39 #* to enter manage menu when idle. In the main menu, "*" works as "*cancel*", "*#*" works as "*confirm*", "*3*" works as "*Up*", "*9*" works as "*down*".

2. Press "*#*" to edit time.

3. Use keypad to set the current time, press "*#*" to confirm.

Time format：Year-Month-Day Hour：Minute

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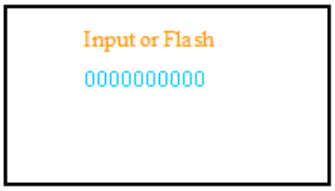
3.2 Card Configuration

3.2. 1 Add Card

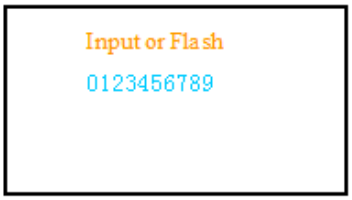
1. Use button *3* or *9* to select Cards when enter the manage menu.

2. Use button *3* or *9* to select Add Card.

3. Press # to enter register interface.



4. Input a ten digits number or flash the card you want to register on the WAC 1D2T MICRO, the card number will be read by the WAC 1D2T MICRO and will automatically display on the screen.



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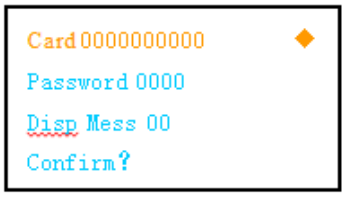
5. Press # to enter the next menu.



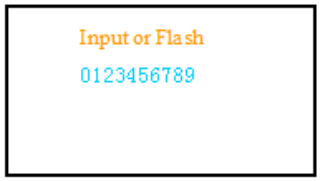
Verify the card information and input the password if needed then select "*Confirm?*" and press # to confirm. If customer wants to add another or more cards, please go back to step 3 and repeat the process.

3.2. 2 Delete Card

1. Use button *3* or *9* to select Cards when enter the manage menu.

2. Use button *3* or *9* to select Del Card.

4. Input a ten digits number or flash the card you want to register on the WAC 1D2T MICRO, the card number will be read by the WAC 1D2T MICRO and will automatically display on the screen.



5. Press # to enter the next menu.

Note：When the screen shows Del Card OK, it means you have successfully deleted a registered

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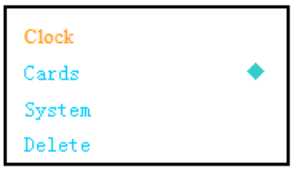
card. If customer wants to delete more cards then just continue flashing the card and press # to confirm deleting. There is no need to go back to step 2.

3.2.3 Del All Cards

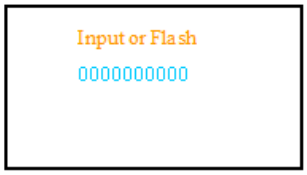
Use Del All Cards to clear all cards.

1. Use button 3 or 9 to select Cards when enter the manage menu.



2. Use button 3 or 9 to select Del All Card

3. Press # to enter Delete All Card interface.



4. Input a ten digits number or flash the card you want to register on the WAC 1D2T MICRO, the card number will be read by the WAC 1D2T MICRO and will automatically display on the screen.

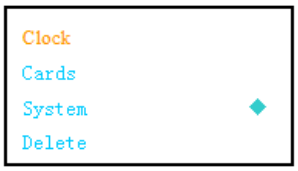
5. Press # to enter the next menu.

3.3 System Configuration

3.3.1 Language Setting

The WAC 1D2T MICRO support two languages. (English and Chinese)

1. Use button 3 or 9 to select System when enter the manage menu.



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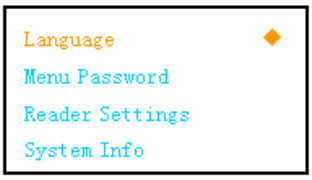
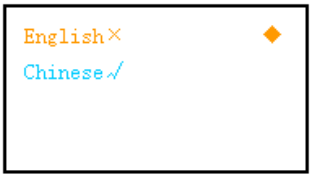
2. Press # to enter System interface.



3. Press # to enter language setting interface.



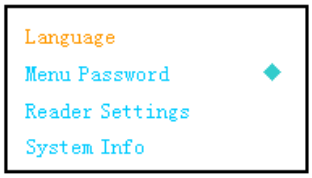
Use button 3 or 9 to select the language customer wanted. Press # to confirm.

3.3.2 Menu Password

There is no default password. Customer can set password. Steps:

1. Use button 3 or 9 to select System when enter the manage menu.

2. Use button 3 or 9 to select Menu Password.



3. Press # to enter Menu Password setting interface

Use the keypad to input 6 digits password and press # to confirm. User will have to input the password if he wants to enter manage menu.

Use the keypad to input 6 digits password and press # to confirm. User will have to input the password if he wants to enter manage menu.

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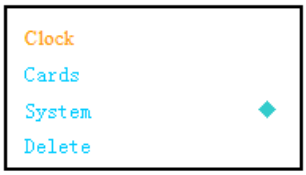
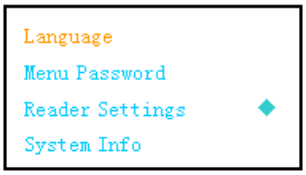
3.3.3 Reader Settings

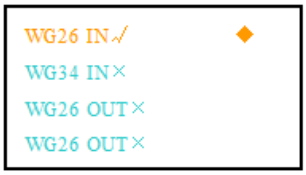
1. Use button 3 or 9 to select System when enter the manage menu.



2. Use button 3 or 9 to select Reader Settings.



3. Press # to enter Reader setting interface



Use button 3 or 9 to select reader Input/output format。

3.3.4 System Info Configuration

1. Use button 3 or 9 to select System when enter the manage menu.

2. Use button 3 or 9 to select System Info.

3. Press # to enter System Info setting interface

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4. Use button 3 or 9 to select Device ID and press # to confirm.

Press # to confirm Device ID setting. Device ID must be set when using multiple WAC 1D2T MICRO's while it's not necessary for standalone.

3.3.5 Network Configuration

1. Use button 3 or 9 to select System when enter the manage menu.

2. Use button 3 or 9 to select System Info.

3. Press # to enter System Info setting interface
4. Use button 3 or 9 to select Network and press # to confirm.

Use button 3 or 9 to select network mode. The defaulted IP address is 10.1.1.10

3.3.6 Sleep Time

1. Use button 3 or 9 to select System when enter the manage menu.

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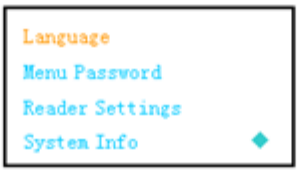
2. Use button 3 or 9 to select System Info.



3. Press # to enter System Info setting interface.

4. Use button 3 or 9 to select Sleep Time and press # to confirm.

Use keypad to input sleep time (sec), press # to confirm.

3.3.7 Board info

Use to check the WAC 1D2T MICRO version and production date.

3.4 Delete

3.4.1 Clear Event

1. Use button 3 or 9 to select Delete when enter the manage menu.

2. Press # to enter Delete interface.

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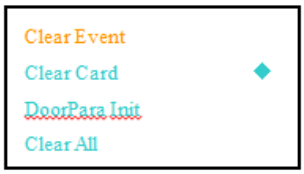
Press # again to confirm Clear Event.

3.4.2 Clear Card

1. Use button 3 or 9 to select Delete when enter the manage menu.

2. Press # to enter Delete interface and use button 3 or 9 to select Clear Card.



Press # again to confirm Clear Card.

3.4.3 Door Parameter Initialize

1. Use button 3 or 9 to select Delete when enter the manage menu.

2. Press # to enter Delete interface and use button 3 or 9 to select DoorPara Init.

Press # again to confirm Door Parameter Initialize.

3.4.4 Clear All

If somehow the entire data, time, password or work mode is messed up, we can use Clear All to reset the controller to defaulted state.

1. Use button 3 or 9 to select Delete when enter the manage menu.

2. Press # to enter Delete interface and use button 3 or 9 to select Clear All.

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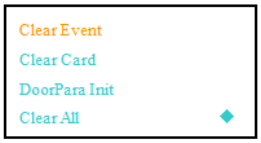

Press # again to confirm Clear All and all configuration will be set to default.

3.5 Door Open Mode

1 By Card
Steps: 1. Register your card by using Add Card in the manage menu. 2. Flash the card on the WAC 1D2T MICRO. (3-10cm read range) 3. The display shows card number, owner name. 4. Relay responds, door open. Please note that if the card is not registered then the WAC 1D2T MICRO will beep three short sounds and shows invalid card on the display. The door will stay closed.

2 By card + PIN
Steps: 1. Register your card and set password by using Add Card in the manage menu. Password is limited to 4 digits. 2. Flash the card on the WAC 1D2T MICRO. (3-10cm read range) Input your password after a long beep sound and press # to confirm. Password should be inputted in 8 seconds after flashing your card.

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