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AR-821EF [Fingerprint]

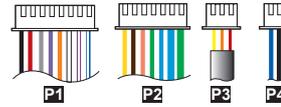
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AR-821EV [Finger Vein]

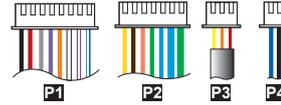
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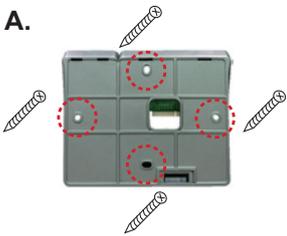


4 Tools



Installation

A.



B.

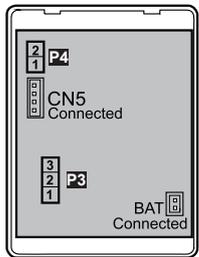
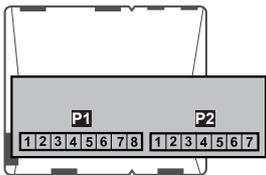


- Use a screwdriver to screw the mounting plate to the wall.
- Pull cables ends through the access hole in the mounting plate.
- Attach AR-821EF or AR-821EV to the mounting plate and install screws (supplied) into the holes at the bottom with the allen key.
- Apply power. LED (green) will light up with one beep.

Notice

- 1.Tubing:** The communication wires and power line should NOT be bound in the same conduit or tubing.
- 2.Wire selection:** Use AWG 22-24 Shielded Twist Pair to avoid star wiring.
- 3.Power supply:** Don't equip reader and lock with the same power supply. The power for reader may be unstable when the lock is activating, that may make the reader malfunction.
The standard installation: Door relay and lock use the same power supply, and reader use independent power supply.

Connector Table



Cable: P1

Wire Application	Wire	Color	Description
Door Relay	1	Blue White	(N.O.)DC24V1Amp
	2	Purple White	(N.C.)DC24V1Amp
Common-COM-Point	3	White	(COM)DC24V1Amp
Door Sensor	4	Orange	Negative Trigger Input
Exit Switch	5	Purple	Negative Trigger Input
Alarm Relay	6	Gray	N.O./N.C. Optional (by jumper)
Power	7	Thick Red	DC 12V
	8	Thick Black	DC 0V

Cable: P3

Wire Application	Wire	Color	Description
Tamper Switch	1	Red	N.C.
	2	Orange	COM
	3	Yellow	N.O.

Cable: P2

Wire Application	Wire	Color	Description
Networking	1	Thick Green	RS-485 (B-)
	2	Thick Blue	RS-485 (A+)
Wiegand	3	Blue	WG DAT: 1 Input ABA Clock Input
	4	Green	WG DAT: 0 Input ABA Data Input
Buzzer	5	Pink	Buzzer Output 5V/100mA, MAX
LED	6	Brown	LED Green Output 5V/20mA, MAX
	7	Yellow	LED Red Output 5V/20mA, MAX

Cable: P4

Wire Application	Wire	Color	Description
Serial Port	1	Black	Signal Ground
	2	Blue	TTL Serial Data Output in 4800, N, 8, 1

Front Panel & Indicator

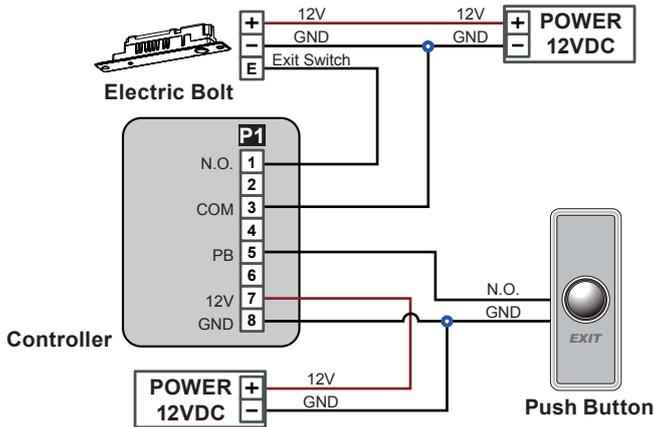


Attendance/Duty Functions		
(F1) Up	Press "1 time" Duty on	Press "2 times" Break out
(F2) Down	Duty off	Break RTN
(←F3) Left	Overtime on	Go out
(→F4) Right	Overtime off	Return
(*) Esc / Quit	(#) Enter / OK	

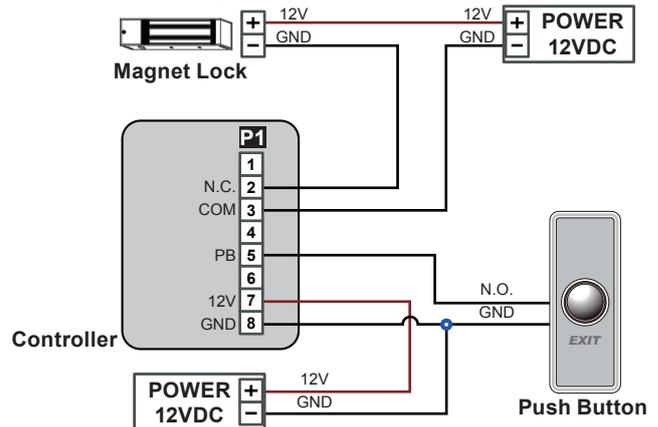
- System will automatically exit from Programming Mode when inactivating for 30 seconds.
- LED status indicates controller's mode and status.
 - Busy (red) – blinking constantly when you operate in Programming Mode
 - or flashing an existed card in card learn mode, it comes 2 warning beeps and LCD panel displays "Same Card: user address / card number"
 - Error (red) – invalid card with 2 warning beeps and LCD panel displays "Card Number Err!"
 - or in anti-pass-back mode, when violates the access, it comes one warning beep and LCD panel displays "Anti-pass Error!"
 - Arming (green) – arming on status
 - Alarm (red) – any abnormal condition occurs
- Keypad will be locked up when constantly entering incorrect pin code or master code.
- Maximum error times of pin code and master code can be changed via the software 701Server (default: 3 times)

Wiring Diagram

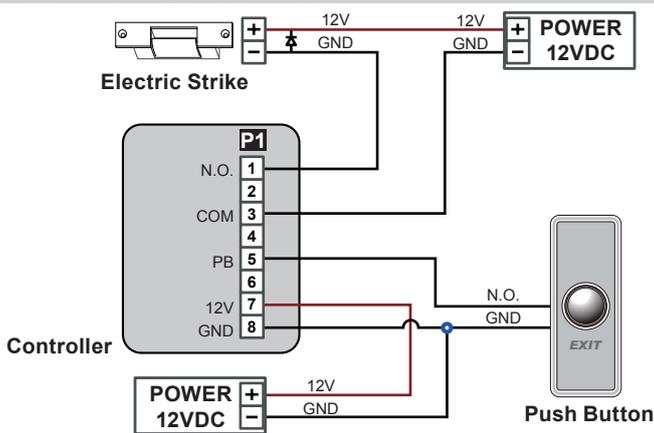
Connector to Electric Bolt



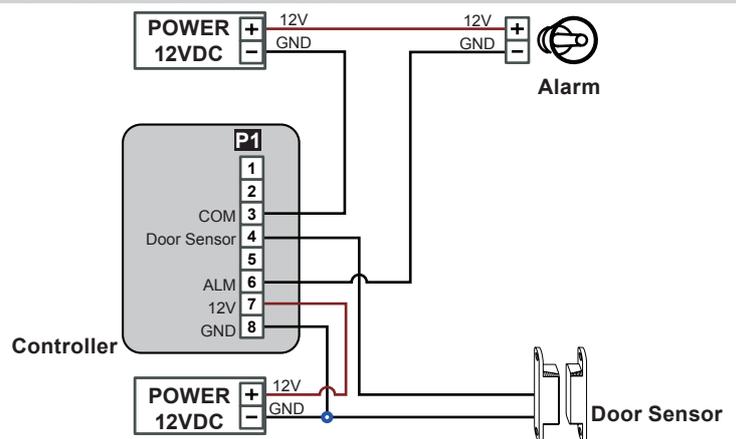
Connector to Magnet Lock



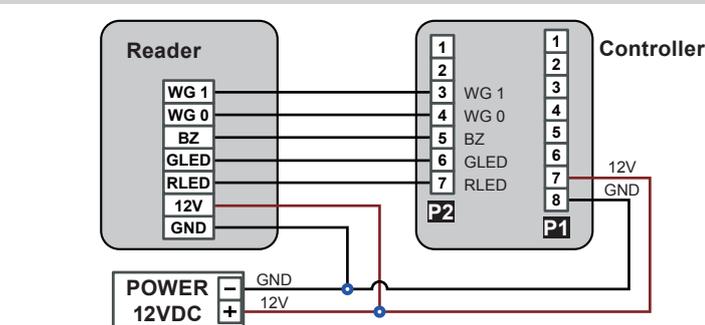
Connector to Electric Strike



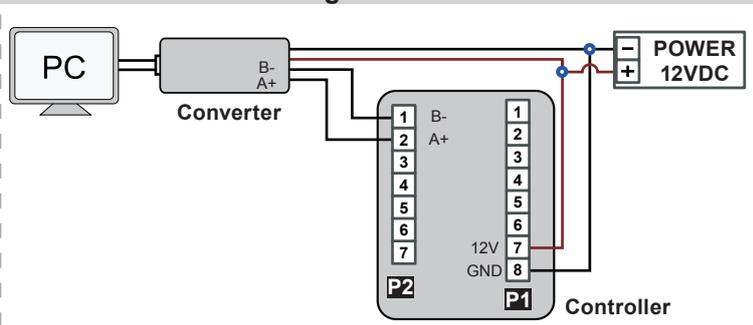
Connector to Door Sensor



Connector to Reader



Connector to Networking



Adding and Deleting User

A. Adding / Deleting Tag

• Adding Tag by Tag ID

Access programming mode → 1 Add/Delete → 1 Add Card > ID → Input 5-digit user address → Input Site Code → Input Card Code

• Adding Tag RF Induction

Access programming mode → 1 Add/Delete → 2 Add > RF Learn → Input 5-digit user address

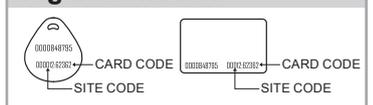
→ Input Tag Units(pcs) → Get Tag close to RF Area to induct.

※ For a batch of **Sequential tags**, present the tag of the **lowest number** to the controller; for a batch of non-sequential tags, present all the tags one by one to the controller.

• Deleting User Address

Access programming mode → 1 Add/Delete → 5 Delete > Address → Input Start address → Input End address

Tag Information



B. Adding / Deleting Fingerprint or Finger-Vein

- **Adding**
Access programming mode → 2 User Setting → 6 Enroll FP → Key in 5-digit user address → 2 different fingers on the sensor lens → Succeeded
P.S. The AR-821EF need to collect twice for each fingerprint, and the AR-821EV need to collect three times.
- **Deleting**
Access programming mode → 2 User Setting → 7 Delete FP → Key in 5-digit user address → Succeeded
P.S. If you want to delete all users' FP, key in 9999 #

Programming

A. Keyboard Lock/ Unlock

- **Lock/ Unlock**
Inputting * and # at the same time can make keyboard locked, and then press once to unlock.

B. Entering and Exiting Programming Mode

- **Entering**
Input *123456# or *PPPPPP#
[e.g.] The Default Value= 123456. If already changed the Master Code= 876112, input *876112# → Access programming mode
P.S.If within 30 sec. entering no instruction, it will automatically exit the programming mode.
- **Exiting**
Press the * twice repeatedly → 6 Quit → then press # to confirm
- **Changing the Master Code**
Access programming mode → 5 Tools → 2 Master Code → Input the 6-digit new master code → Succeeded

C. Initial setup

- **Changing the Language**
Access programming mode → 5 Tools → 1 Language → 1 EN → Succeeded → Initial system...
- **Changing the Node ID of Reader**
Access programming mode → 3 Parameters[1] → 1 Node ID → Input New Node ID:1~254(default value: 001) → Input: 1~4 to Show Card ID in which format? (1.No, 2.WG, 3.ABA, 4.HEX) → Succeeded

D. Access Mode

- Access programming mode → 2 User Setting → 2 Access Mode → Key in 5-digit user address → 1:FP/Tag; 2:or PIN; 3: and PIN; 4: Pause → Check FP Image: 1: Yes; 2: No → Succeeded

Access Mode	User Access Type	
	[Check FP Image] must select [1: Yes]	[Check FP Image] must select [2: NO]
1: FP/Tag	FP only/ Tag + FP	FP only/ Tag only
2: or PIN	FP only/ Tag + FP/ User address + PIN + FP	FP only/ Tag only/ User address + PIN only
3: and PIN	FP + PIN	FP + PIN/ Tag + PIN
4: Pause	Pause	Pause

※ 4 Parameters[2] → 9 Check User FP → must select [1: Yes]

E. Anti-pass-back

- Access mode Card and Pin, Card Pin or Card only for connecting with the model AR-721K
Access mode Card only, Card and PIN for connecting with the model AR-721U, AR-737H/U (WG mode) and AR-661U

- **Device enable**
Access programming mode → 4 Parameters[2] → 7 Anti-pass-back → must select [1: Yes]
- **Card user enable**
Access programming mode → 1 Add/ Delete → 9 Antipass Group → Key in 5-digit starting user address → Key in 5-digit ending user address → select [1: Yes]

F. Setting up the alarm

- **Conditions:**
 - Arming is enabled
 - Prompt alarm system connected
- **Application:**
 - Door open too long:** Door is open longer than door relay time plus door close time.
 - Force open** (Opened without a valid user card): Access by force or illegal procedure.
 - Door position abnormal:** When power is off and then on, the reader is on arming before power off.
- **Enable/Disable Arming status:**

Standby Mode		
Card only	Card or Passcode	Card and Passcode
After door open	Door is not open	Induct valid card → Input 4 digit
Induct valid card → Input 4 digit arming code → #	* → Input 4 digit arming code → Induct valid card	Induct valid card → Input 4 digit pass code → # → Input 4 digits arming code → #
Enter Program Mode		
Enable: Access programming mode → 7 Quit & Arming		Disable: Access programming mode → 6 Quit

※ [Use FP] can substitute for [Induct valid card].

G. PIN Code

- Access programming mode → 2 User Setting → 1 Password → Key in 5-digit user address → Key in 4-digit PIN (0001~9999) → Succeeded
Or via 701Client to set it up on Users screen

H. Arming Password

Access programming mode → **3** Parameters[1] → **8** Arming PWD → **Key in 4-digit PIN (0001~9999; Default: 1234)** → Succeeded
 Or via 701Server to set it up on AR-821EF or AR-821EV screen

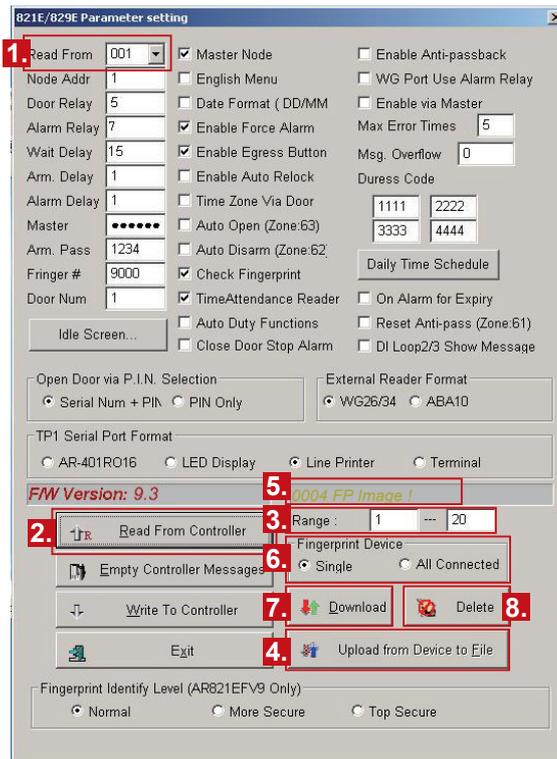
I. Duress Code

Access programming mode → **4** Parameters[2] → **8** Duress Code → **4 sets (select one)** → **Key in 4-digit PIN (0001~9999)** → Succeeded
 Or via 701Server to set it up on AR-821EF or AR-821EV screen

※Duress Code is only available in networking mode. It will substitute a personal pin code and send the message of Duress to computer as a warning signal and access door.

Software Settings on 701Server

1. Click "82X" icon
2. Click "Read From Controller"
3. Click "Write To Controller" once setting completed
4. Click "Exit"



※Please note that the fingerprint data will be saved in different format V3 and V9, so the data is not compatible.

• Uploading fingerprint database to PC

First of all, please make sure users have registered their fingerprints to the device.

1. select node number of the device
2. click "Read From Controller"
3. set range to 20 (it is suggested not to exceed more than 20 fingerprints each uploading and downloading)
4. click "Upload from Device to File"
5. status popped up

• Downloading fingerprint database from PC to the device(s)

6. by selecting "Single" or "All Connected", the FP database can be downloaded to one single device or all connected devices. (Suggest to download by "Single".)
7. click "Download"

• Deleting fingerprint database on the device

3. select the range of the fingerprints to delete (Not over 20 Fingerprints.)
8. click "Delete"

Manu Tree

1. Add/ Delete

1. Add > Card ID
2. Add > RF Learn
3. Suspend > Address
4. Suspend > ID #
5. Delete > Address
6. Delete > ID #
7. Recover > Address
8. Recover > ID #
9. Antipass Group

2. User Setting

1. Password
2. Access Mode
3. Extend Options
4. Single Floor
5. Multi Floor
6. Enroll FP
7. Delete FP

3. Parameters[1]

1. Node ID
2. Auto open Zone
3. Door Relay Tm
4. Door Close Tm
5. Alarm Relay Tm
6. Alarm Delay Tm
7. Arming Delay Tm
8. Arming PWD

4. Parameters[2]

1. Auto Relock
2. Egress(R.T.E)
3. Attendance
4. Master Node
5. Force Open
6. Close & Stop
7. Anti-pass-back
8. Duress Code
9. Check User FP

5. Tools

1. Language
2. Master Code
3. Master Range
4. Terminal Port
5. AR401RO16 Node
6. Open Time Zone
7. Informations
8. Clock Setting

6. Quit

7. Quit & Arming