

Principle

The programmable sequential controller is designed specifically for use with pneumatic dust collector systems. It is used to control the solenoid of the diaphragm valve in order to program the pulse jet sequence of the valves. LED lights serve as indication of status of pulse position and timing.

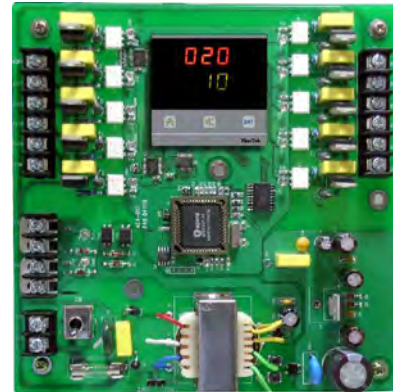
Both the pulse jet timing and duration of each pulse jet could be adjusted by the logic circuitry. The controller has 2 independent "ON" and "OFF" methods, the 1st is when the AC power supply is cut off, the controller will shut down. When the AC supply is reconnected, the controller will automatically revert to its initial default settings. The 2nd method is to employ the use of the controller's remote contacts (R,C,A) as the controlling signal.

The sequential collector uses a microprocessor to control the pulse jets of a diaphragm valve through the electrical solenoid of the valve. The controller has 2 rows of 7 segment digital display. The first row displays the diaphragm valve number to be activated next, the 2nd row displays the time left before it activates the next valve. The pulse jet timing, duration of each pulse jet and the number of valves to be controlled could be set to user's requirements. Also, the controller is able to be programmed to automatically execute the pulse jet cycle even after the system shuts down. The user just needs to configure all settings through the buttons on the face of the board. The controller is both user-friendly and serves a wide range of applications and will definitely satisfy all requirements of the user.

Features

- Digital Display, provides ease of operation and clear display of operation status.
- Microprocessor: Accurate and precise operation.
- Remote Control: Convenient control through remote means.
- Able to automatically execute the pulse jet cycle even after the system shuts down so as to prevent residue sticking unto cloth filter.
- Option: Water-proof and dust-proof enclosure, to extend lifespan of the controller.

*AE110A (10 points)



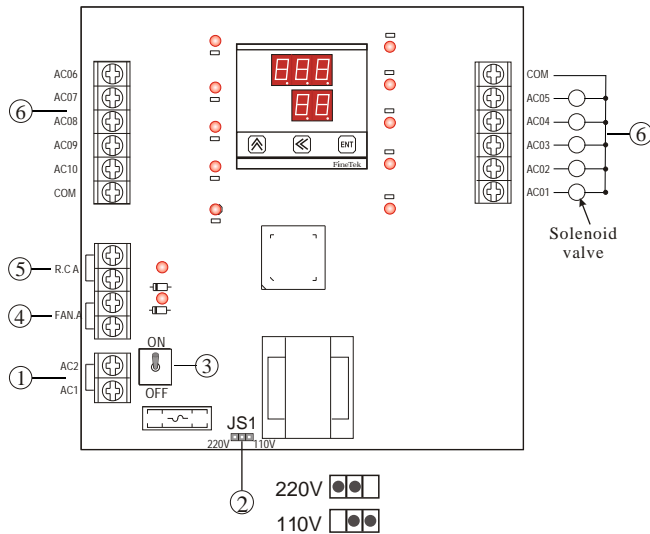
*AE120A (20 points)



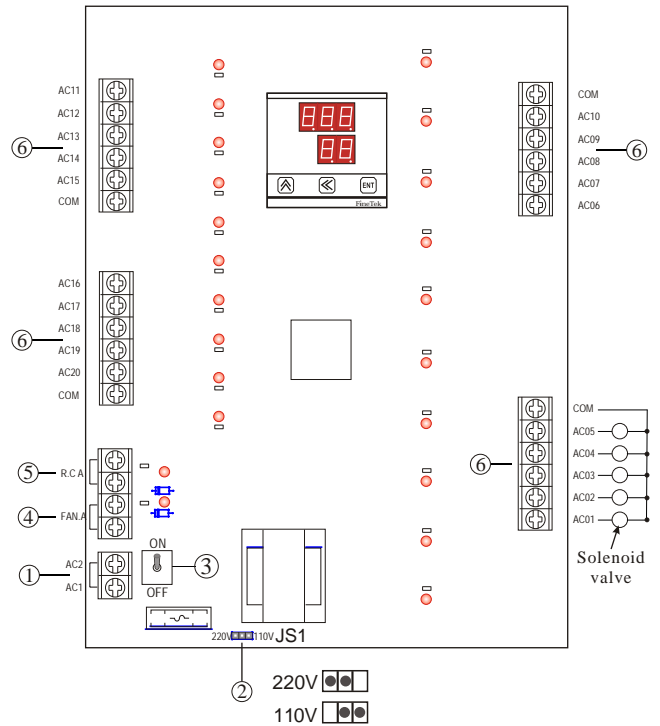
*AE140A (40 points)



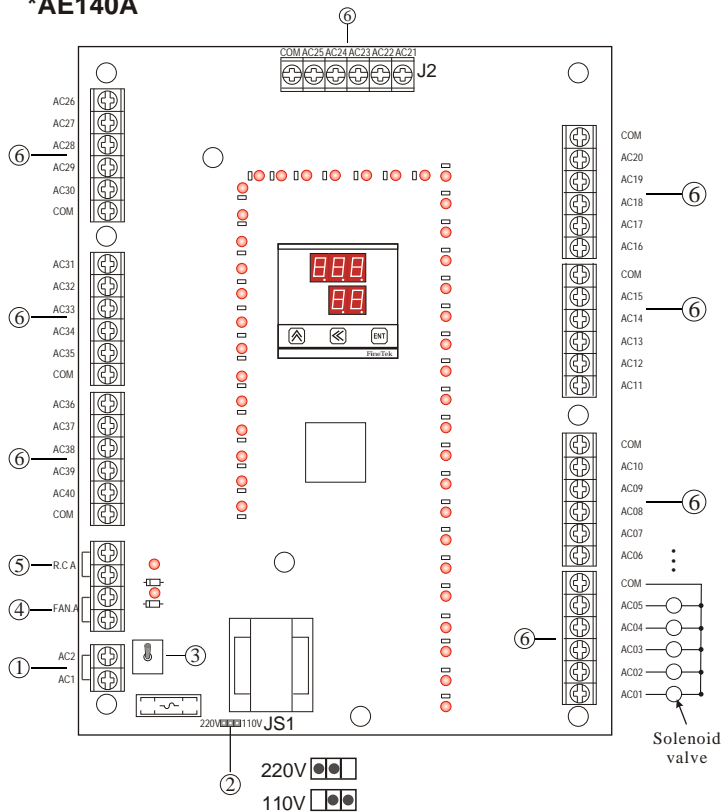
*AE110A



*AE120A



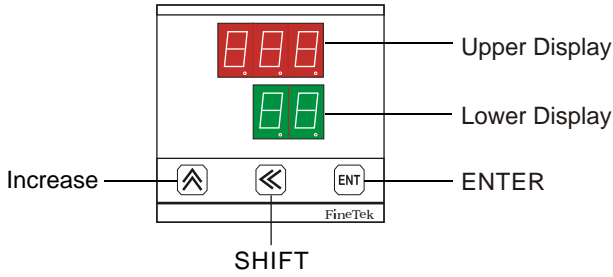
*AE140A



• Terminal Description

- ① **Power supply: (AC1, AC2)**
The Controller is able to select AC110V or 220V.
- ② **Power supply selection: (JS1)**
Please select the power supply AC 110V or 220V.
- ③ **Power switch**
- ④ **Fan control input: (FAN.A)**
This function is used to complete Auto-Shut-Off cleaning cycle before controller stopped. When this contact is closed, controller running regularly. When this contact is open, controller will run Auto-Shut-Off cleaning cycle (defined by "CLC" setting). This function is purposed to prevent dust clogged on the bag.
- ⑤ **Remote control input: (R.C.A)**
If remote control is required, please remove the short circuit, then, extend the wiring to remote site. When the remote input is open circuit, the controller will stop operation, when the remote input closed circuit, the controller resumes normal working operation.
- ⑥ **Solenoid terminals:**
Terminals are connected to solenoids.

● Operation Panel:



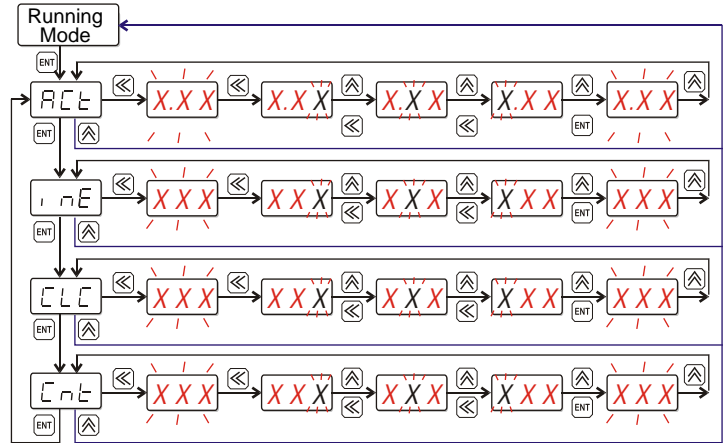
● Description of Panel Setting

Upper Display	Function	Range (Time error)
RCt	Purge time	001 ~ 999 S ± 5mS
int	Purge period	001 ~ 999 S ± 0.1S
CLC	Auto-Shut-Off cleaning	000 ~ 099 times
Cnt	Number of solenoid	000 ~ nn
Lower Display	Function	Range
00 ~ nn	Number of solenoid	01 ~ 10/20/40 Ports

● Description of Running

Upper Display	Function
999 ~ 000 S	Time to next purge
Lower Display	Function
00 ~ nn	Next solenoid number

● Panel Setting Flowchart



Example: To set Purge time: 1 sec.
Purge period: 10 sec.
Auto-Shut-Off cleaning: 2 times
Number of solenoid: 10 ports

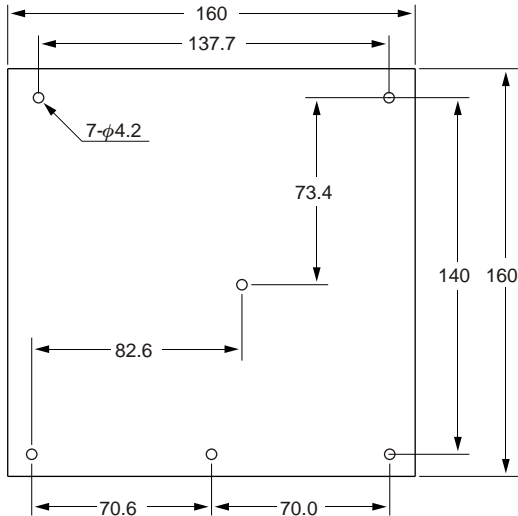
Follow the steps below:

- 1 Press **ENT** into **RCt** purge time setting.
- 2 Press **←** to make "X.XX" blink (Possible to change value at this setting mode)
- 3 Press **→**, **←** to change the value till 1.00
- 4 Press **→** so that "1.00" doesn't blinking, **RCt** setting is done.
- 5 Then press **ENT** into **int** purge period, repeat step 2~4 to change the value till 010.
- 6 Then press **ENT** into **CLC** clean up cycle setting, repeat step 2~4 to change the value till 002.
- 7 Then press **ENT** into **Cnt** solenoid number setting, repeat step 2~4 to change the value till 010.

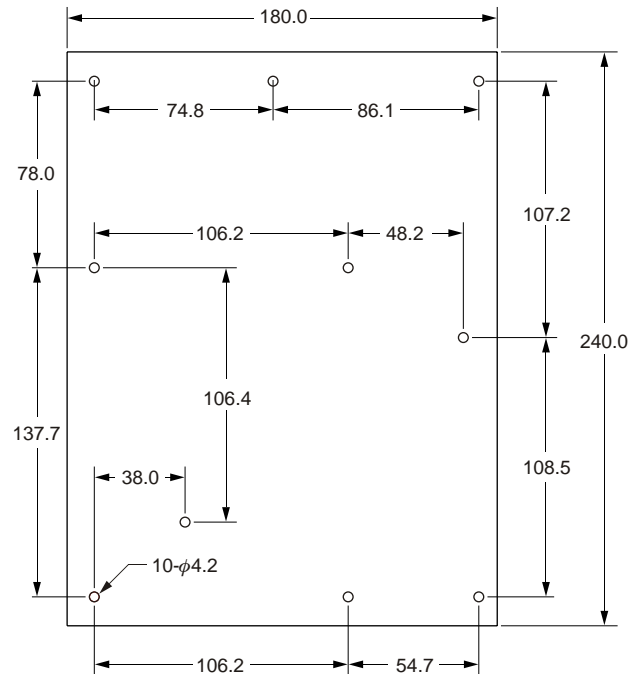
Controller

• Dimensions

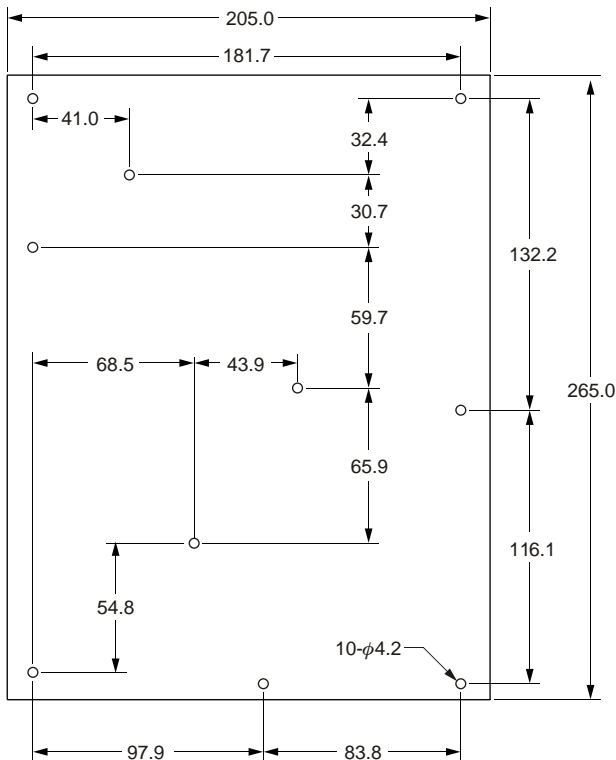
*AE110A (10 point)



*AE120A (20 point)



*AE140A (40 point)



Controller electrical

■ Specifications

- Power supply: 110V/220V, A20%
50Hz/60Hz
- Interval adjustable range: 1s~999s
- Spray time adjustable range: 10ms~9.99s
- Fuse: 3A
- Number of sequence: 1~10 / 20 / 40
Points
- Ambient temperature : 0 ~70°C
- Indication: 2 Sets of digital display
- Input: 3 Push buttons
- Delay between stage: 0~99 times

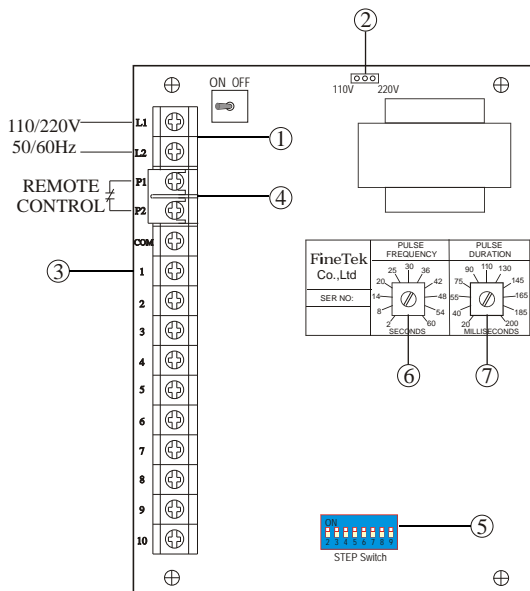
*CASE (Optional)

Material: ABS

Dimension: 230x300x86.5mm

Problem	Reason	Troubleshoot
7-segment LED doesn't lights up.	<ol style="list-style-type: none"> 1. Power supply not switched on / No power. 2. Fuse is burned 	<ol style="list-style-type: none"> 1. Reconnect power supply / switch on power. 2. Replace fuse, product comes with 2 pcs 3A/250V fuses.
7-segment LED lights up but diaphragm valves do not action.	<ol style="list-style-type: none"> 1. Incorrect power supply used, causing compressor to be burnt. 2. Solenoid of diaphragm valve and power supply is of different specifications. 3. Input contact short-circuit card of air fan is detached. 4. Remote control short-circuit contact is detached. 	<ol style="list-style-type: none"> 1. Return to factory for inspection. 2. Select power supply pin to suitable power supply value. 3. Short Fan .A terminals 4. Short RC .A terminals
Jet pulse operation malfunction	<ol style="list-style-type: none"> 1. Jet pulse timing or jet pulse duration is set wrongly. 2. Number of jet pulses set wrongly. 	<ol style="list-style-type: none"> 1. Verify and re-program the correct values for jet pulse timing and duration as well as the total number of pulses required.
Air leakage	<ol style="list-style-type: none"> 1. Diaphragm valve is installed in reverse direction. 2. Rubbish is found inside the diaphragm valve or in the diaphragm. 3. The solenoid of the valve is faulty. 	<ol style="list-style-type: none"> 1. Re-install the valve in it's correct position. 2. Remove the rubbish, it should solve the problem. 3. Please check the wiring connection of the solenoid.

* AE410A (10 points)



● Connections

1. Power Supply Selection

② is used for selection of power supply, factory default is set at 220V. If the power supply is 110V, just transfer the jumper connection from 220V end to 110V end.

2. Wiring

- A. Live wire of the power supply must be connected to L1 terminal, the neutral wire must be connected to L2 terminal.
- B. Common wire of solenoid must be connected to COM terminal whereas the others are connected to their respective terminals 1~10.
- C. Remote control ④ is used for long distance control or cascading control. If neither of these controls are required, do not remove the shorting metallic strip at terminals P1 and P2.

3. Step Switch

Adjust ⑤ to indicate the numbers of solenoid steps to action. Controller will action from solenoid 1 ~ required solenoid number and will repeat itself continuously.

4. Interval adjustable

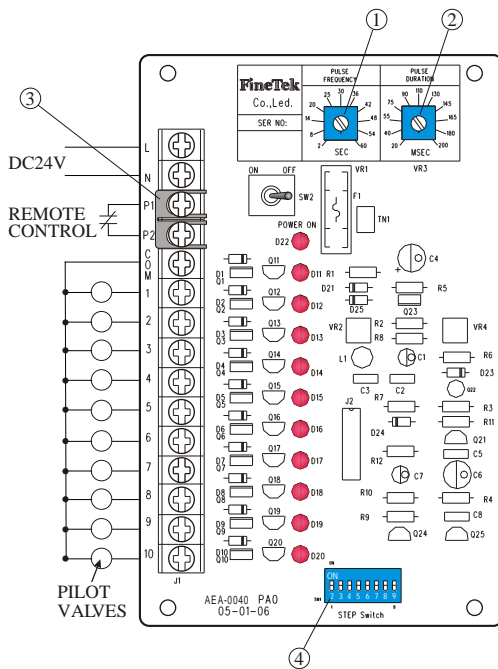
Adjust ① to the value required for the time delay between each individual valve operations.

5. Spray time adjustable

Adjust ③ to the value required for how long the solenoid valves remain in operation

- 6. After the various settings are done, please start operation by switching on the power supply.

* AE520D (10 points)



■ Wiring

- A. Connecting DC24V(+) to the terminal L, DC24V(-) to the terminal N.
- B. All common wires of solenoid valves connect to the terminal COM, the other wire of each solenoid valve connects to corresponding terminal(1~10).
- C. Terminal P1 & P2 are used for remote control or multi-points (> 10) control. Do not remove the metal jumper unless remote control or multi-points (> 10) control are needed.

■ Setting the number of active solenoid valves

Set the DIP switch to the number($1 \leq N \leq 10$) of active solenoid valves, the air blow sequence will be 1 to N repeatedly.

■ Interval adjustable

Adjust ① to the value required for the time delay between each individual valve operations.(2~60 s)

■ Spray time adjustable

Adjust ③ to the value required for how long the solenoid valves remain in operation. (20~200 ms)

After the various settings are done, please start operation by switching on the power supply.

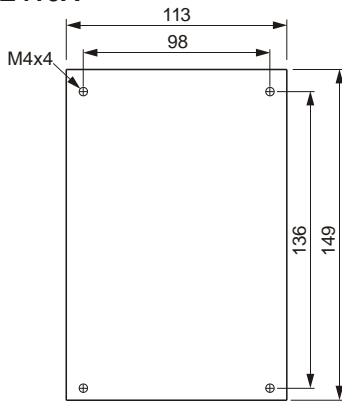
Controller electrical

● Specifications

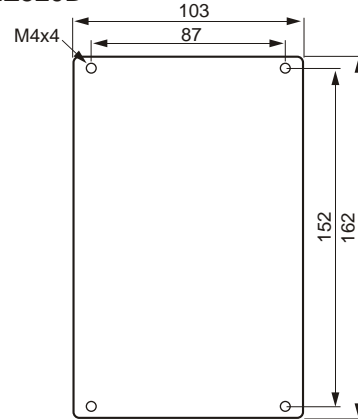
- Power supply:
 - AE410A---110V/220VAC, $\pm 20\%$ 50Hz/60Hz
 - AE520D---24V DC
- Interval adjustable range: 2s~60s
- Spray time adjustable range: 20ms~200ms
- Fuse: 3A
- Number of sequence: 2~10 points
- Ambient temperature : 0 ~50°C

● Dimensions

* AE410A



* AE520D



● Optional

*CASE

Material: Cover--- PC
 Box----- ABS

