# AEX6 Sequential Controller Operation Manual (Continuous Expansion Type)

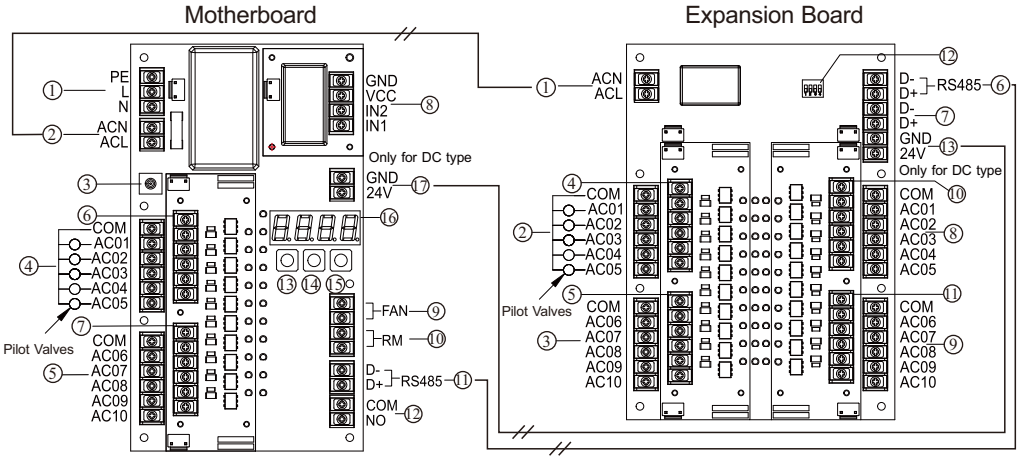
## INTRODUCTION

AEX6 is specifically designed for use with pneumatic dust collector systems. It comprises of a microprocessor and a logic analysis & control circuit, with an output of 10, 20 points (up to 620 points with an expansion board) to control the solenoid of the diaphragm valve which in turn controls the pulse jet sequence of the valves, thus achieving the dust collector's main objective of cleaning the bag filter. The LED display panel indicates the current pulse jet position. Pulse Jet time and interval time can be adjusted. The number of control points can also be adjusted and increased. Wide application range, with user-friendly operation.

## SPECIFICATION

| Item | Specification | |
|---|---|---|
| | Motherboard | Expansion Board |
| Power supply | 100~240Vac ±10%, 50/60 Hz | 100~240Vac ±10%, 50/60 Hz (Power input must be provided by the motherboard) |
| Power consumption | 3 VA (excluding output) | |
| Operating temp. | -20°C~70°C | |
| Operating humidity | RH 20~85% | |
| Output type (optional) | AC Output: consistent with power supply voltage, max. 1A<br>DC Output: 24V, max. 1.25A | |
| Output point (optional) | 10、20 | 20、30、40 |
| Pulse jet interval | 1~999 seconds | N/A |
| Pulse jet time | 10 milliseconds ~ 9990 milliseconds | |
| Shutdown cycle function | Yes | |
| Remote control function | Yes | |
| 4~20mA input (optional) | Yes | |
| Alarm output contact | SPST 3A 250Vac / 24Vdc | |
| Outer box (optional) | 210 × 290 × 100, box ABS cover PC | |

## WIRING INSTRUCTIONS




### Motherboard

① Power input terminal: Power supply 100~24Vac±10%, PE-grounded.
② Power output terminal: connect to power input of expansion board (if available).
③ Power switch: ON / OFF
④ Output point terminal: first group points 01~05 is connected to the solenoid valve.
⑤ Output point terminal: points first group 06~10 is connected to the solenoid valve.
⑥ Output point terminal (optional): second group points 01~05 is connected to the solenoid valve.
⑦ Output point terminal (optional): second group points 06~10 is connected to the solenoid valve. After point 10 is activated, it will return to the first group's 01 cycle, or jump to the expansion board (if any).
⑧ 4~20mA input terminal (optional): connect to a differential pressure sensor. When the signal is greater than the set value, interval time will be automatically shorted by 50%, and cleaning effect of the fabric bag will improve.
⑨ Shutdown cycle terminal: connected parallel to the exhaust fan switch, the fan will stop running when turned OFF to continue the cleaning cycle. The controller operates normally when the contact is on but will disconnect and shut down after a set number of operating cycles to avoid clogging caused by damp and residual dust in the pipe.
Note! Do not remove the shorting strip when this function is not in use.
⑩ Remote control terminal: To start the remote controller, remove the circuit breaker and connect the switch. To stop, disconnect the contact. Note! Do not remove the shorting strip when this function is not in use.
⑪ RS-485 port: parameter setting or expansion connection used at the same time.
⑫ Alarm output terminal: External input signal, alarm output when the set range is reached, the pipe may be broken.
⑬⑭⑮⑯:Display / Parameter Settings
⑰ 24Vdc output (DC type): connect to the expansion board GND, 24V (if available).

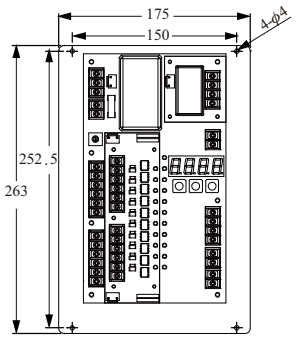
### Expansion Board

① Power input terminal: connect to the mainboard power output ACN, ACL. Note! Do not directly supply power to the expansion board as it may result in electrical damage.
② Output point terminal: first group points 01~05 is connected to the solenoid valve. After the last point is activated, the operation will begin in the order of group and point number.
③ Output point terminal: first group points 06~10 is connected to the solenoid valve.
④ Output point terminal: second group points 01~05 is connected to the solenoid valve.
⑤ Output point terminal: second group points 06~10 is connected to the solenoid valve.
⑥ RS-485 port: connect to the mainboard RS-485, D+D- terminal.
⑦ RS-485 port: connect to the next expansion board, up to 15 pieces.
⑧ Output point terminal: third group points 01~05 is connected to the solenoid valve.
⑨ Out point terminal: third group points 06-10 is connected to the solenoid valve.
⑩ Output point terminal: fourth group points 01~05 is connected to the solenoid valve.
⑪ Output point terminal: fourth group points 06~10 is connected to the solenoid valve. After point 10 has been activated, return to mainboard group 01 or jump to the next expansion board (if available).
⑫ Communication ID setting: set ID1, ID2, ID3…ID15 according to required configuration. If the expansion board ID has been set at the factory, please do not change it at will.
⑬ 24Vdc input (DC type): connected to the main board DC output GND, 24V.

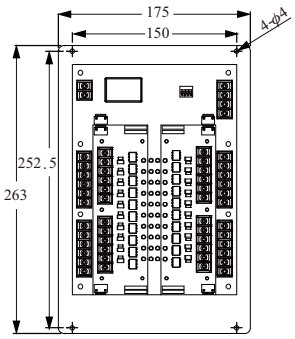
## MEASUREMENT

(Unit:mm)

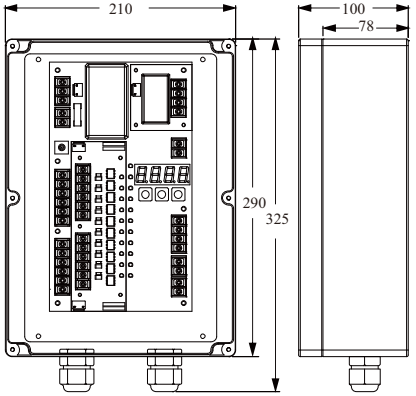
Motherboard




Expansion Board




Outer Box (optional)




## ID SETTING INSTRUCTIONS

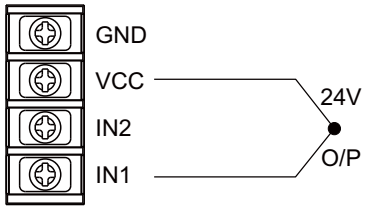
| ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| DIP Switch |  |  |  |  |  |  |  |

| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |

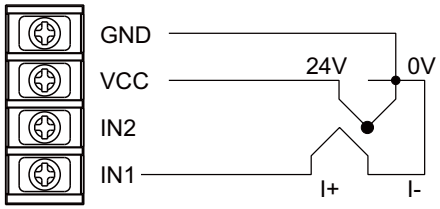
Note! ID has been set at the factory, please do not change it at will.

## WIRING DIAGRAM 4~20mA INPUT (Optional)

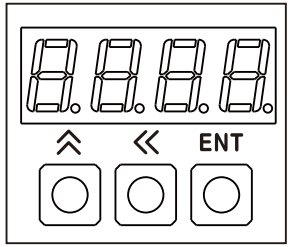
Differential Pressure Transmitter




Dust Collector System




## PANEL FUNCTION




| Button | At Menu Mode | At Setting Mode |
|---|---|---|
| ENT | Go to next menu option | Verification |
| « | Go to next option | Left Cursor |
| » | Return to previous option | Increase number value |

## SHORTCUT KEY FUNCTION

Click the shortcut key to quickly open the display page and check device status.

»: Displays total number of working points, e.g. 60 points. t060

«: Modbus Switching state.
Master normal working status. EASt
Slave – for PC software to set and use. SLAU

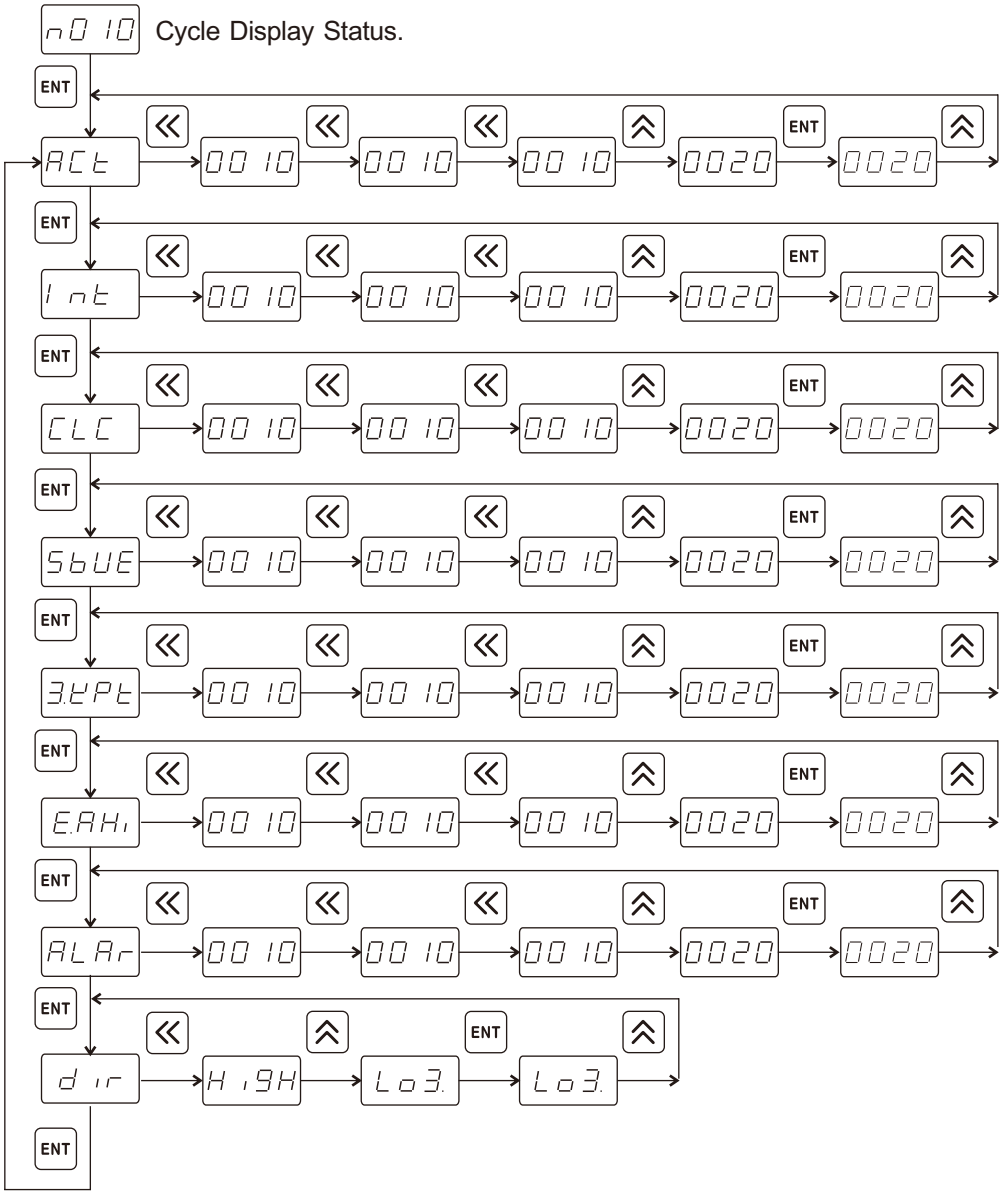
## CODE

| | | | | | |
|---|---|---|---|---|---|
| A:A | B:b | C:C | D:d | E:E | F:F |
| G:9 | H:H | I:. | J:J | K:K | L:L |
| M:E. | N:n | O:o | P:P | Q:9 | R:r |
| S:5 | T:t | U:U | V:U | W:3 | X:H |
| Y:Y | Z:2 | | | | |

## INSTRUCTIONS

| Instructions | Description | Setting range | Factory preset |
|---|---|---|---|
| ACt | Jet time setting | 10~9990 milliseconds | 1000 |
| int | Interval time setting | 1~999 seconds | 3 |
| CLC | Setting the number of shutdown cycles: the number of cycles before fan stops for cleaning. | 0~99 times | 0 |
| SbUE | Number of expansion boards: number of expansion boards connected on site. | 0~15 pieces | According to order , 0 |
| 3UPt | Number of working points: the number of valves connected on site. | 1~620 points | According to order , 10, 20 |
| EAHi | Time-lapse mode: current ≥ set value, automatically shorten the interval time by 1/2 | 0~100 % | 100 |
| ALAr | Alarm setting value: external input signal, connected to Relay output | 0~100 % | 100 |
| dir | Directional selection: current ≥setting (Hi) or ≤setting (Lo), alarm output | High / Low | High |

## SETTING FLOW CHART




## TROUBLESHOOTING

| Problem | Possible reason | Solution |
|---|---|---|
| The display does not light up | 1. Power is not supplied, or the power switch is not turned on.<br>2. The fuse has blown.<br>3. The cover or cable connected is not locked, and the water inlet circuit is damaged. | 1. Restart the power or turn on the switch.<br>2. Replace the fuse. Two 3A/350V fuses are included with the goods.<br>3. Ensure the lock is tight to prevent leakage. Install a rain cover if possible. |
| The display is on, but the diaphragm valve does not work | 1. The power supply is not functioning properly, has overloaded or short-circuited, and the circuit is damaged.<br>2. The solenoid valve specifications do not match the output.<br>3. Shutdown cycle function: remove the shorting strip when not in use.<br>4. Remote control function: remove the shorting strip when not in use. | 1. Return to factory for repairs or purchase a new item.<br>2. The reconfigured solenoid valve has the same voltage as the main board or expansion board.<br>3. Replace the shorting strip or the FAN terminal wiring.<br>4. Replace the shorting strip or the R.M terminal wiring. |
| Dust collection efficiency is not up to expectations | 1. Jet time and jet interval time incorrectly adjusted.<br>2. Number of jobs is incorrectly set.<br>3. Expansion board is not working, and the connection with the mainboard is incorrect. | 1. Check the jet time and jet interval time settings.<br>2. Correct the setting for the number of jobs.<br>3. Check ID settings and wiring, adjust and amend. |
| A certain point does not work | 1. Diaphragm valve is spoilt, or wiring has come off.<br>2. Valve body or shaft is defective, or foreign matter has entered and gotten stuck.<br>3. Two solenoid valves are connected in parallel at one point, resulting in overload and causing the thyristor to blow. | 1. Check the solenoid value and wiring, adjust and amend.<br>2. The diaphragm valve repairs and removes impurities, will operate normally after power is restored.<br>3. Change the wiring point of the solenoid valve to another functioning point. |
| Continuous air leakage at a certain point | 1. The valve body or shaft is defective, or foreign matter has entered and gotten stuck.<br>2. Two solenoid valves are connected in parallel at one point, resulting in overload and causing the thyristor to blow. | 1. The diaphragm valve repairs and removes impurities, will operate normally after power is restored.<br>2. Change the wiring point of the solenoid valve to another functioning point. |

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