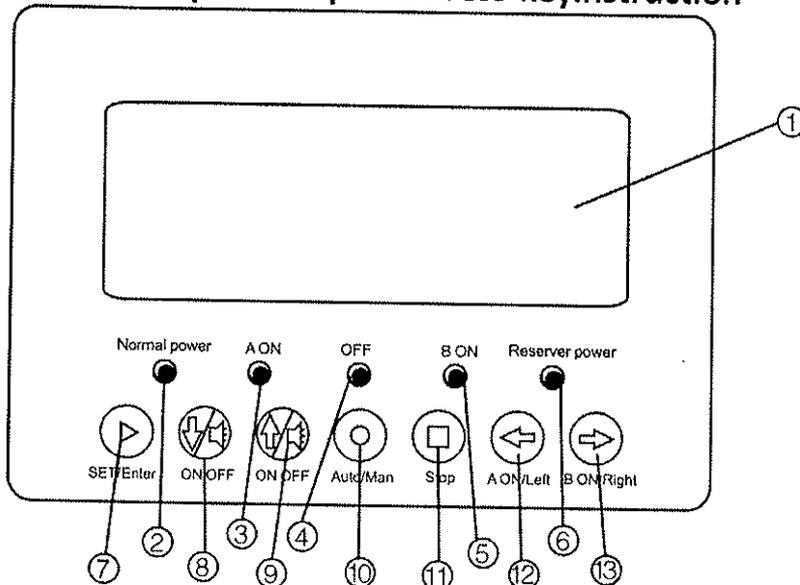


## LCD controller operation Instructions (V2 edition)

### 一: LCD Controller Brief Introduction Of The Function

- ❖ User can set up different parameter flexibly according to actual requirements.
- ❖ LCD display the true data during power network operating and the real-time switching relative information.
- ❖ Function of one key to Recovery (restore the original status)
- ❖ 24V fire control and long-distance double-breaking function.
- ❖ Separate the brake when dual power exist failure.
- ❖ Faulty record information to be displayed and deleted function.
- ❖ RS485 remote communicating type to achieve telemetering , remote signaling, remote regulating and remote control systems.
- ❖ Chinese and English double languages System. this function need to be setted
- ❖ Alarm temporarily or permanently close/on function.
- ❖ Operation mode: Automatic/Manual (this function need to be setted)
- ❖ Working state: self-operation and self-recovery, self-operation and no self-recovery this function need to be setted
- ❖ Real-time clock display( user can setup the system time conform with the fact time.
- ❖ LCD controller can control step-2 and also Step-3, MQ2 series dual power automatic transfer switch.
- ❖ This controller can test the input voltage for two sets of three phases and four lines, and also can test the over-voltage, under-voltage and phase failure. It can deal with the malfunction automatically. The controller has the function of alarm and starting the generator automatically.
- ❖ Manage the transfer between Set A and Set B for power supply.
- ❖ A B power pilot lamp instruction, A B power put into operation instruction, double-breaking instruction
- ❖ Board key-press: SET (Setup/confirm), DOWM (Decrease/ sound switch) , UP (ADD/ sound switch), AUTO/ MAN (automatic/manual), STOP( stop), AON—(Normal Put into operation/shift left), BON/--(reserve put into operation/shift right)

### 二: Board pilot lamp and Press-keyinstruction



- ① LCD Display
- ② Normal power pilot lamp
- ③ Normal power Put-in pilot lamp
- ④ Both divide pilot lamp
- ⑤ Reserve power Put in pilot lamp
- ⑥ Reserve power pilot lamp
- ⑦ Setup/ confirm key
- ⑧ Subtrahend key
- ⑨ Addend key
- ⑩ Automatic/manual key
- ⑪ Stop key
- ⑫ Normal put -in operation/shift left
- ⑬ Reserve put-in operation/shift right

◇ **Board pilot lamp instruction**

- Normal power pilot lamp: when normal power works regularly, it is on, otherwise , it is off or blinks.
- Reserve power pilot lamp: when normal power works regularly, it is on, otherwise , it is off or blinks.
- Both divide pilot lamp : when the switch located in the middle station, it is on, otherwise it is off.
- Normal power Put-in pilot lamp: when the normal power supply electricity, it is on, otherwise it is off.
- Reserve power Put in pilot lamp : when the reserve power supply electricity it is on, otherwise it is off.

◇ **Board Press-key Operation Brief Instruction**

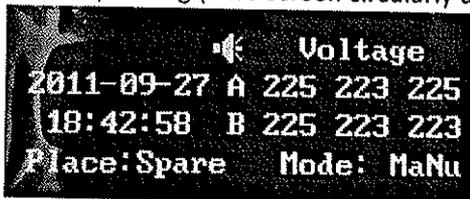
- **Setup/ confirm key (S1):**
  1. press this key and enter parameter system to setup parameters, and it plays the function of saving the confirmed parameters.
  2. if not in the process of setting up parameter, long-press this key and it will delete the fault information.
- **Subtrahend key(S2):**
  - 1.press this key and access the parameter system, subtrahend function,
  - 2.Out of “set up parameter system” mode, it plays the function of permanently closing the alarm voice. (Alarm status will be the same as previously confirmed)
- **Addend key(S3):**
  - 1.press this key and access the parameter system, addend function,
  - 2.Out of “set up parameter system”mode, it plays the function of temporarily closing the alarm voice. (Alarm status will be the same as previously confirmed)
- **Automatic/manual key(S4):**
  - 1.In “set up the system parameters” process , it plays the function of “logging off the setting up system”.
  - 2.Out of the “set up system ”process, it plays the function of transfer key .( transfer between automatic , manual mode and waiting mode)
- **Stop key(S5):**
  - 1.when setting up the system parameters, it plays the function of back to the previous setup menu.
  2. (3 steps), if out of “set up system parameters” process, press this key, no matter in automatic or manual mode , it will cut off the electricity both from normal and reserve power, switch transfer to middle position. Then the system will access the manual mode.
- **Normal put -in operation/shift left(S6):**
  1. when setting up the system parameters, it plays the function of moving the cursor left.
  2. if not setup system parameters, under the manual mode , press “normal put-in operation/shift left” key ,then the normal power supply electricity.
- **Reserve put -in operation/shift right(S7):**
  1. when setting up the system parameters, it plays the function of moving the cursor right.
  2. if not setup system parameters, under the manual mode , press “Reserve put-in operation/shift right” key , then the Reserve power supply electricity.

≡: **Controller interface operation introduction.**

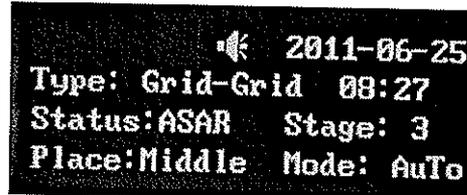
- ◇ **Interface displayed after starting the controller:** LCD controller will display the following interface firstly after its starting.



- ◇ **Normal displayed interface:** Under the normal power conditions, the controller will display following interface when operating.( Two screen circularly display )

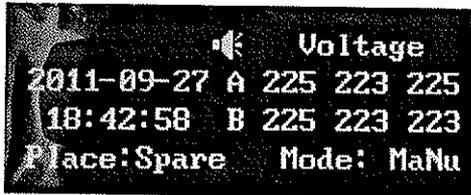


main interface1

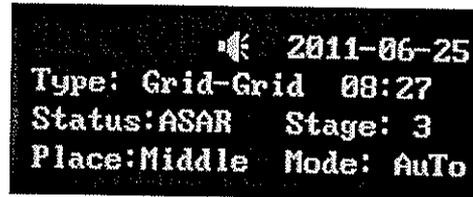


main interface2

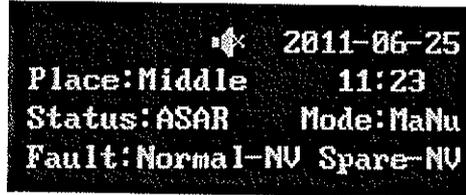
- ❖ **Faulty -Transfer displayed interface:** when any faulty occurred in the two way power, or transfer failed, (three screen circularly display), under the condition of alarm opened, it will send out the audio signal. If user need to delete the faulty information,(must under manual or automatic mode),please long-press the S1 key(buzzing sound gives out more than 6 times), then leave from the key, "Faulty delete"reminder interface will be displayed in LCD screen, and system will be back to the main interface after deleting the faulty.



main interface1



main interface2



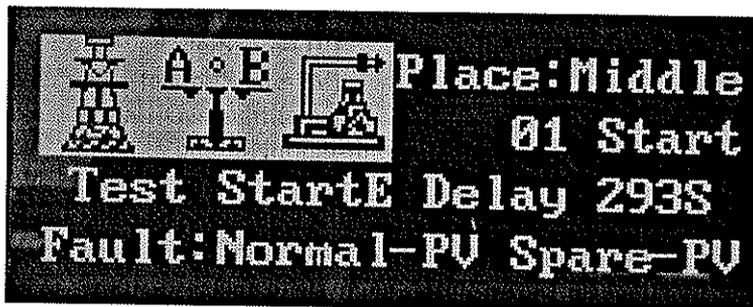
main interface3

**Faulty classification as followings:**

- |  |   |
|--|---|
| 1-Normal power over-voltage[Normal-OV]   | 2-Normal power low-voltage[Normal-UV]         |
| 3-Normal power phase failure[Normal-PV]  | 4-Normal power interrupted[Normal-NV]         |
| 5-Reserve power over-voltage[Spare-OV]   | 6-Reserve power low-voltage [Spare-UV]        |
| 7-Reserve power phase failure[Spare-PV]  | 8-Reserve power interrupted[Spare-NV]         |
| 9-Generator failed to start[Gen-start failed!]                                   | 10-Generator failed to stop[Gen-stop failed!] |
| 11-Normal power failed to put in[Normal-Into failed]                             |   |
| 12-Normal power failed to open switch[Normal-Part failed"]                       |   |
| 13-Reserve power failed to put in[Spare-Into failed]                             |   |
| 14-Reserve power failed to separate the break[Spare-Part failed]                 |   |
| 15-Fire control or remote breaking in alarming state[Fire or Linkage!]           |   |
| 16-singal feedback in error (something wrong with micro-switch [Feedback error!] |   |

- ❖ **Automatic switching display interface:**

Under the Automatic mode, if the faulty occurred in the working power, and it need to transfer to another power, then the LCD display interface as below.(under manual mode, when the fire control with 24V voltage or in the process of remote breaking, controller will give out breaking signal immediately, and system will not enter transferring interface and switch will transfer in the middle location rapidly , then system will access the waiting mode. After confirming that there is no fire alarm or remote information, press " Automatic / Manual Mode"—S4 key, only after in automatic or manual mode, can controller return to be normal.



**Note:** when the power comes fault, controller will transfer to "faulty interface", after its transition, controller will return to normal circular interface;( three steps) If faults occurred in both power supply, then controller will give out signal index to make the switch cut both power, and transfer to the middle location .



- 1、 Electricity network icon: in transfer interface diagrammatic presentation part display the icon to show that,the accordingly power is electricity network.



2、 Generator icon: when in the transfer interface, in this location: if power system is “electricity network-generator”, this icon will be displayed. When power system is “electricity network- electricity network ”, Electricity network iron will be displayed.



3、 Double-breaking location icon:



it means, normal power breaks, and switch transfer to reserve power.(2 step )



it means, reserve power breaks, and switch transfer to normal power.(2 step )



it means, the power switch transfer to the double- breaking location. (3-step )



it means, the power switch transfer from the double-breaking location to reserve power.(3-step )



it means, the power switch transfer from normal power to the double-breaking location.(3-step )



it means, the power switch transfer from the double-breaking location to normal power.(3-step )

4、 (A→off、 OFF→B、 OFF←B、 A←OFF、 A→B、 B←A )once power switch failed to transfer the location, and after three times continuous failure, controller will directly log out from the transfer interface, meanwhile, controller operation interface will display faulty interface, and it is in waiting mode. In this process, user need to confirm the fault to be deleted , and then press “ Automatic / Manual Mode”—S4 key, only after in automatic or manual mode, can controller return to be normal.

5、 Third line shows current operation and its count-down delay : including (A→off、 A←OFF、 OFF←B、 A→B、 A←B , time left to start the generator, time left to test generator starting successfully, time left to stop the generator , time left to test the generator stopping successfully), A←OFF、 OFF←B、 A→B、 A←B count-down time is equal to “A→OFF” time plus “OFF→B” time, “A←B” count-down time is equal to “ A←OFF” time plus “OFF←B” time.

6、 Fourth line shows the faulty information.

7、 **01 Start** this shows, the current generator starting times, if starting times are more than previously set, and user still did not successfully start the generator, system will log out from the transfer interface, and screen will display “failure in starting generator”, then system will automatically access the faulty interface and the mode will be “waiting mode”, under this mode, user need to confirm the fault to be deleted , and then press “ Automatic / Manual Mode”—S4 key, only after in automatic or manual mode, can controller return to be normal.

✧ **Manual transfer display interface:**

Under manual mode, when dual power switch was in switching process, press key S6 and S7, make the controller directly transfer but not access the transfer display interface.

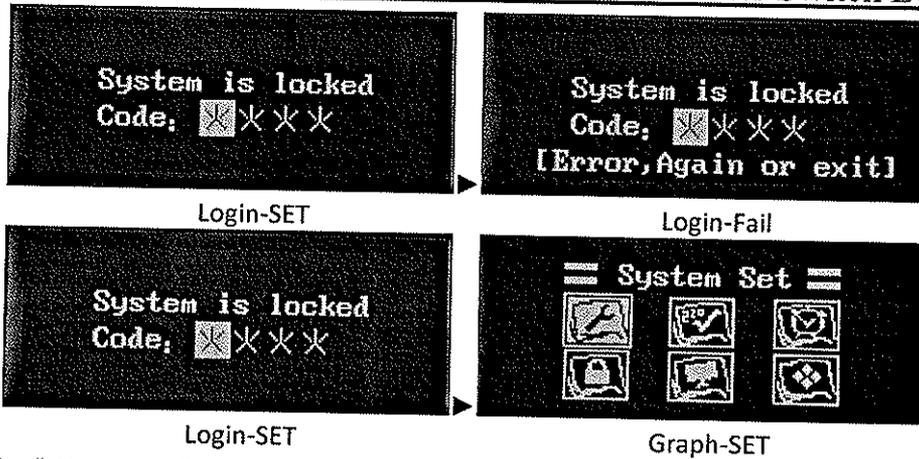
user can make the controller gives out index and set up the dual power in status of “normal power put-in”

“Reserve power put-in ” or “double-breaking location” through operating key S6 and S7. During user’s operation, meanwhile, LCD screen always display the operation status and clearly step tips.

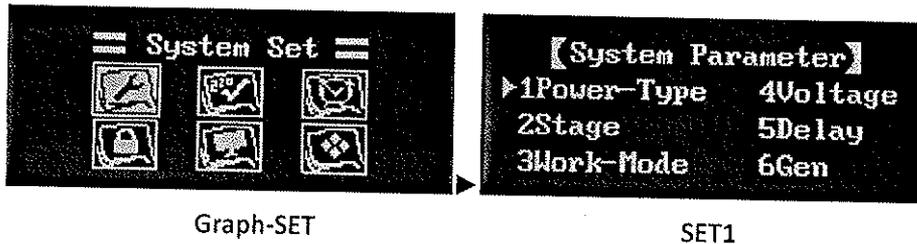
## 四： Controller Detailed Setting Instruction

During the normal operation process, that means, the screen is in normal interface, when the password-lock setting key is “open”, then press key S1, enter the login interface with password, Login-SET, ( initial password : 0000 ) ,when the password-lock was “ invalid ”, and user press key S1, controller will directly enter “setting system” interface , it will display as picture “ Graph-SET ” shows. When in “Login-SET” interface, user can enter password through key S2, S3, S6, S7, and then key S1 to confirm. If password was correct, system will access the “Graph-SET” interface; if not, system will access the “Login-Fail” interface; press key S4 or S5 to exit and return to the main recycle interface.

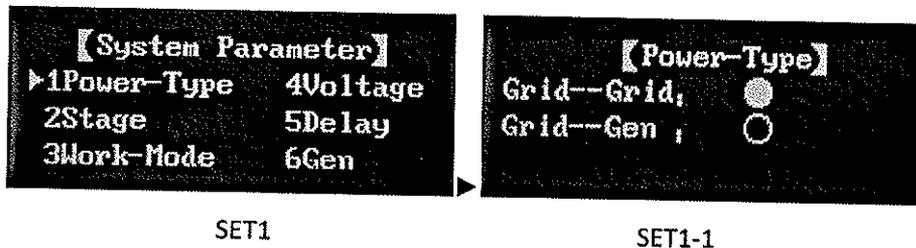
# MQ2 Series Automatic Transfer Switch LCD Controller



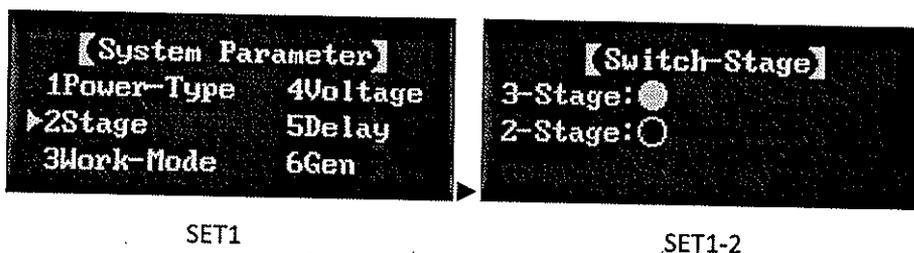
After access the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted, through key S6, S7. If cursor move to the first icon "setting system parameter, and it reverse displayed, then an accordingly text information will be displayed in the screen. Please press key S1(confirm key), and enter SET1 interface.



✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted with key S6, S7, when the cursor stop in the first item, then an arrow will be in from of this item. Press key S1 ( confirmed key ) and enter SET1-1 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface.

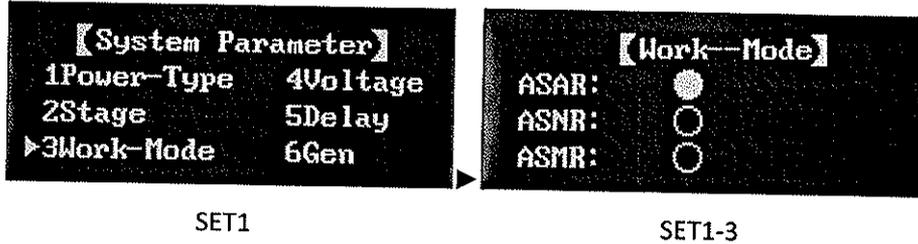


✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted with key S6, S7, when the cursor stop in the second item, then an arrow will be in from of this item. Press key S1 ( confirmed key ) and enter SET1-2 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface.

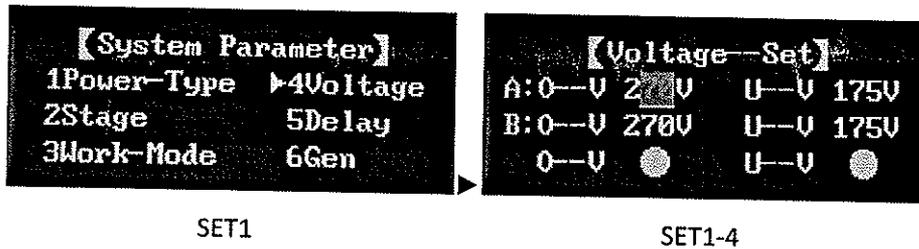


## MQ2 Series Automatic Transfer Switch LCD Controller

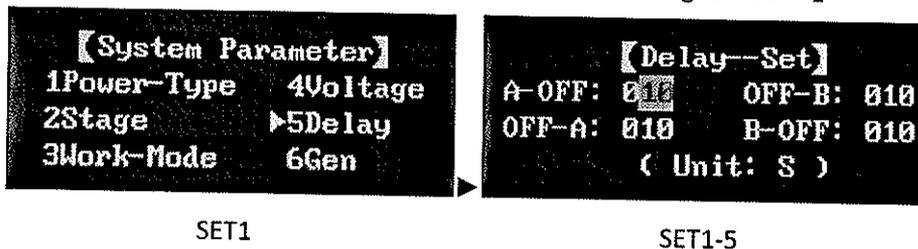
- ✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted, with key S6,S7, when the cursor stop in the third item, then an arrow will be in from of this item. Press key S1 (confirmed key) and enter SET1-3 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface. 【ASAR:Automatic recovery, ASNR:Since the cast ids not self-recovery, ASMR:Mutual backup】



- ✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted, with key S6,S7, when the cursor stop in the fourth item, then an arrow will be in from of this item. Press key S1 (confirmed key) and enter SET1-4 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface. 【Fourth Item: with over-voltage or low-voltage functions setting, if it appears solid circles, it expresses that it has the function of over-voltage or low-voltage, if appears, that means , the controller do not has the function of over-voltage or low-voltage; 【O-V: over-voltage; U-V: low-voltage】



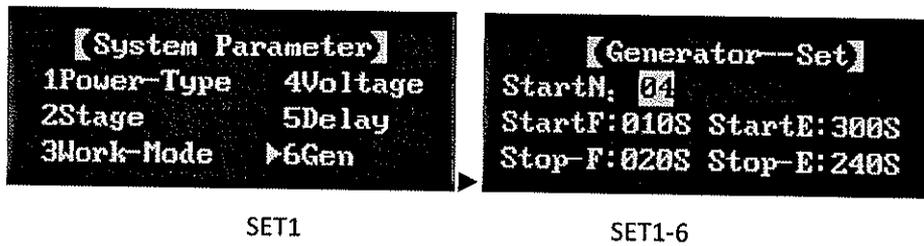
- ✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted, with key S6,S7, when the cursor stop in the fifth item, then an arrow will be in from of this item. Press key S1 (confirmed key) and enter SET1-5 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface. 【A-OFF: Normal power supply →Double -breaking location; OFF→A: Double breaking location →normal power supply; OFF→B: Double breaking location → Reserve power supply; B-OFF: Reserve power supply- Double breaking location】



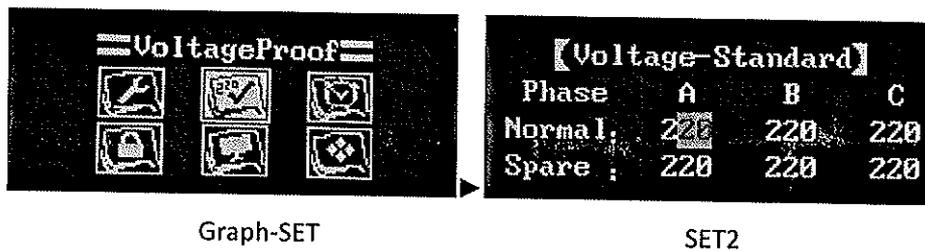
- ✧ In the SET1 interface, move the cursor to the parameter location of which need to be adjusted, with key S6,S7, when the cursor stop in the sixth item, then an arrow will be appeared in from of this item. Press key S1 (confirmed key) and enter SET1-6 interface. In this interface, user can chose the parameter with key S2,S3 or key S6,S7, press key S1 to confirm and save the data, after above process, "SET-OK" interface will appear, after

## MQ2 Series Automatic Transfer Switch LCD Controller

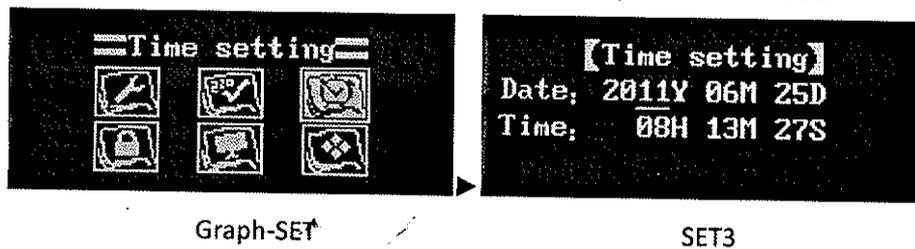
saving the result, system will directly enter the SET1 interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface.



After access the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted through key S6, S7. If cursor move to the second icon "power supply voltage correction" and it reverse displayed, then an accordingly text information will be displayed in the screen. Please press key S1(confirm key), and enter SET2 interface. In the SET2interface, adjust the parameter with key S2, S3, S6, S7( enter the actual power supply voltage), press key S1 to confirm and save the data, "SET-OK" interface will appear, after saving the result, system will directly enter the Graph-SET interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface. **【 generator starting times: total generator starting times; Delay time before starting the generator: generator sends out starting signal after delaying the setting time. Delay time after starting the generator: after generator sends out starting signal, check if the generator successfully starting during the setting time; Delay time before stopping the generator: generator sends out stopping signal after delaying the setting time. Delay time after stopping the generator: after generator sends out stopping signal, check if the generator successfully started during the setting time 】**



In the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted with key S6, S7. If cursor move to the third icon "time setting" and it reverse displays, then an accordingly text information will be displayed in the screen. Please press key S1(confirm key), and enter SET3 interface. In the SET3 interface, adjust the parameter with key S2, S3, S6, S7, press key S1 to confirm and save the data, "SET-OK" interface will appear, after saving the result, system will directly enter the Graph-SET interface; if user press key S4, system will return to the main recycle interface; if press key S5, system will come to previous interface.



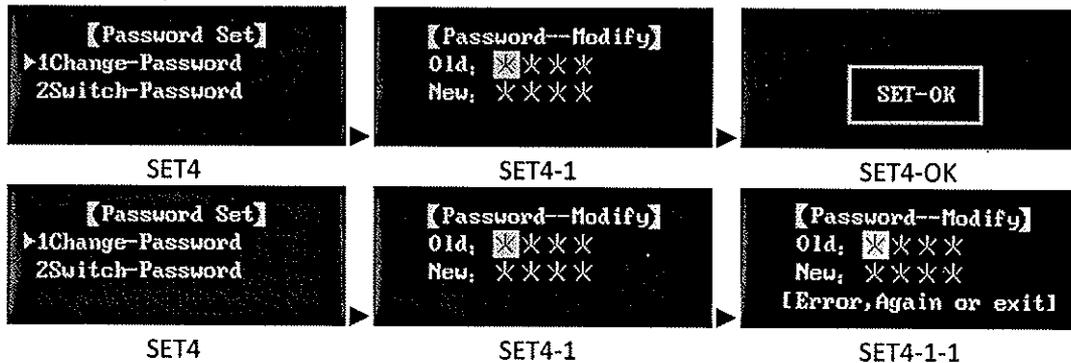
When accessing the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted with key S6, S7. If cursor move to the Fourth icon " password setting " and it will be reverse displayed,, then an accordingly text information will be displayed in the screen. Please press key S1 (confirm key) to access SET4 interface.



Graph-SET

SET4

- After accessing the "SET 4" interface, user can move the cursor to the parameter icon location of which need to be adjusted through key S2, S3 or key S6, S7. When the cursor stop in the First item, then an arrow will be appeared in from of this item. Press key S1 (confirmed key) and enter SET4-1 interface. In the SET4-1 interface, adjust the parameter with key S2, S3, S6, S7, press key S1 to confirm ,if the password entered is correct, then interface SET4-OK will be displayed . After saving the result, the interface will return to "SET-4"; if the password entered is wrong, then interface SET4-1-1 will be displayed . After saving the result, the interface will access interface "SET-4" automatically. User can press key S4 to return to the main recycle interface; if press key S5, system will return to previous interface.



SET4

SET4-1

SET4-OK

SET4

SET4-1

SET4-1-1

- In "SET 4" interface, user can move the cursor to the parameter icon location of which need to be adjusted through key S4, S5. When the cursor stop in the Second item, then an arrow will be appeared in from of this item. Press key S1 (confirmed key) and enter SET4-2 interface. In the SET4-2 interface, adjust the parameter with key S2, S3, or S6, S7, press key S1 to confirm the data , then interface "SET4-OK" will be displayed . After saving the result, the interface will return to "SET4"; Then user can press key S4 to return to the main recycle interface; Or press key S5, system will return to previous interface.

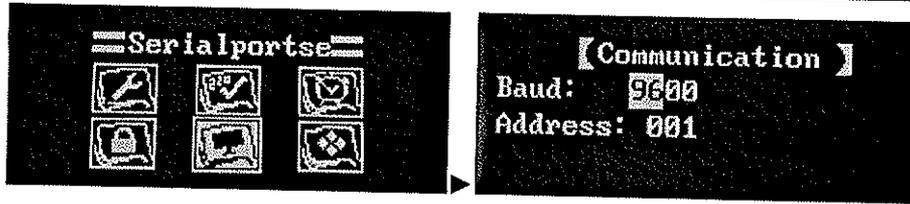


SET4

SET4-2

In the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted with key S6, S7. If cursor move to the fifth icon "Communicate setting" (Communicating type LCD controller) and it reverse displays, then an accordingly text information will be displayed in the screen. Please press key S1 (confirm key), and enter SET5 interface In the SET5 interface, adjust the parameter with key S2, S3, S6, S7, press key S1 to confirm and save the data, "SET-OK" interface will appear, after saving the result, system will directly enter the Graph-SET interface; If user press key S4, system will return to the main recycle interface; If press key S5, system will come to previous interface.

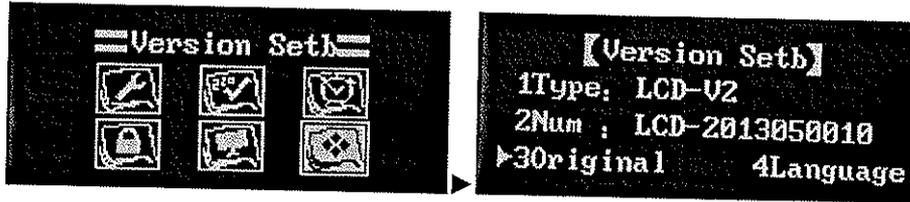
# MQ2 Series Automatic Transfer Switch LCD Controller



Graph-SET

SET5

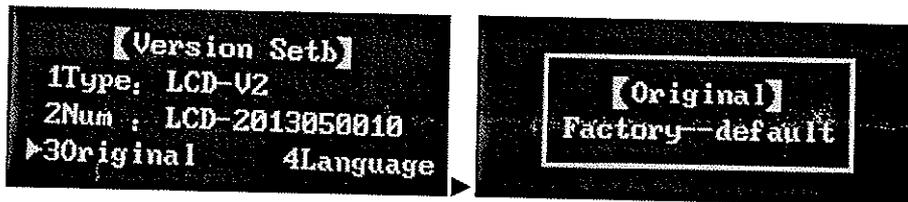
In the " Graph-SET " interface, user can move the cursor to the parameter icon location of which need to be adjusted with key S6, S7. If cursor move to the Sixth icon "Information Version" and it reverse displays, then an accordingly text information will be displayed in the screen. Please press key S1 (confirm key), and enter SET6 interface.



Graph-SET

SET6

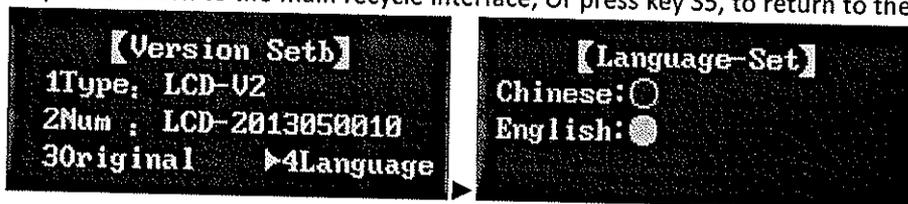
- ✧ In the SET6 interface, press key S1 and enter SET6-1 system recovery interface, choose 3 ( system recovery ) , and press key S1 , then interface come to SET6-1, and system will be restored to the original status. After the recovery process, system will automatically access Graph-SET interface; If user press key S4, system will return to the main recycle interface; If press key S5, system will come to previous interface.



SET6

SET6-1

- ✧ In the SET6 interface, press key S1 and enter SET6-1 system recovery interface, then choose 4 (Language), and press key S1 , then interface come to SET6-2, choose the Language through Key S2,S3,S6,S7, press key S1 to save the result, "SET-OK" will be displayed and system will directly access interface Graph-SET. User can press key S4 to return to the main recycle interface; Or press key S5, to return to the previous interface.



SET6

SET6-2



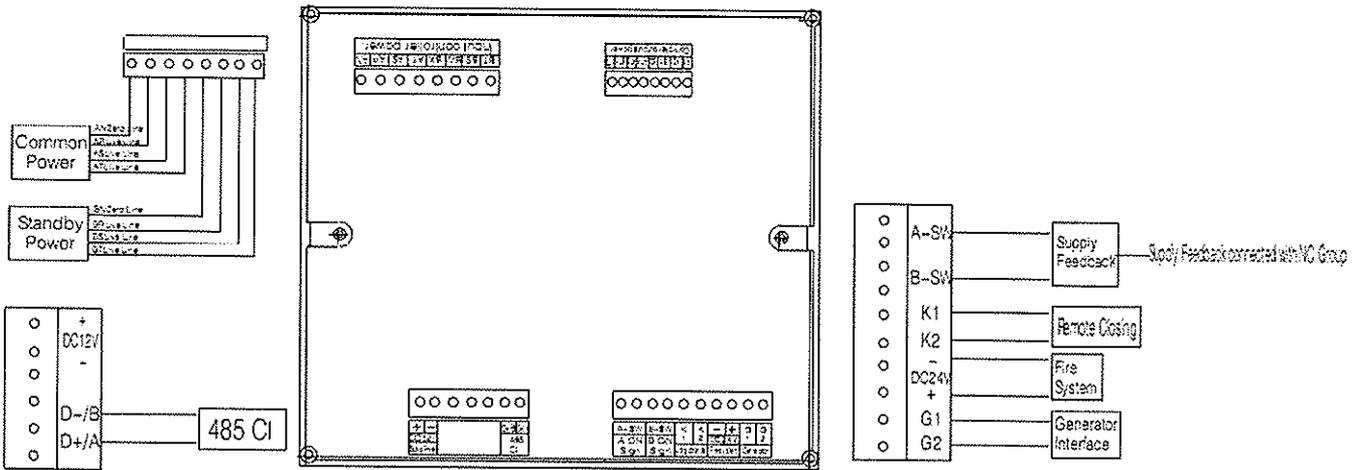
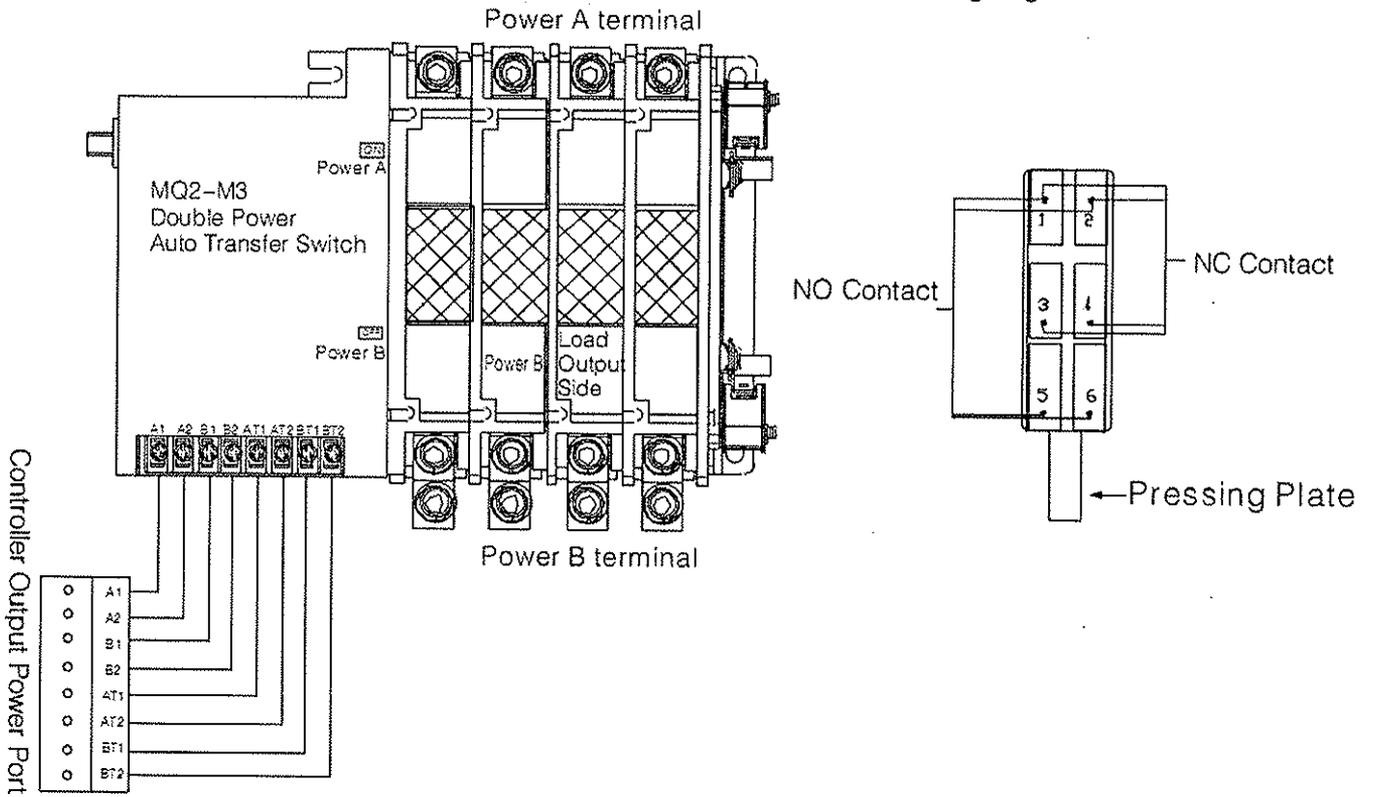
SET-OK

**Notes:**

1. When in the system setting interface ( including the password login interface), if user stay in any one interface to more than 10 seconds, and within this period, user did no setting, system will exit the setting interface and return to the main interface.
2. "SET-OK" interface will be displayed after user adjust the parameter and press key S1 to confirm them,it is prompt message remaindering user result saving successfully.

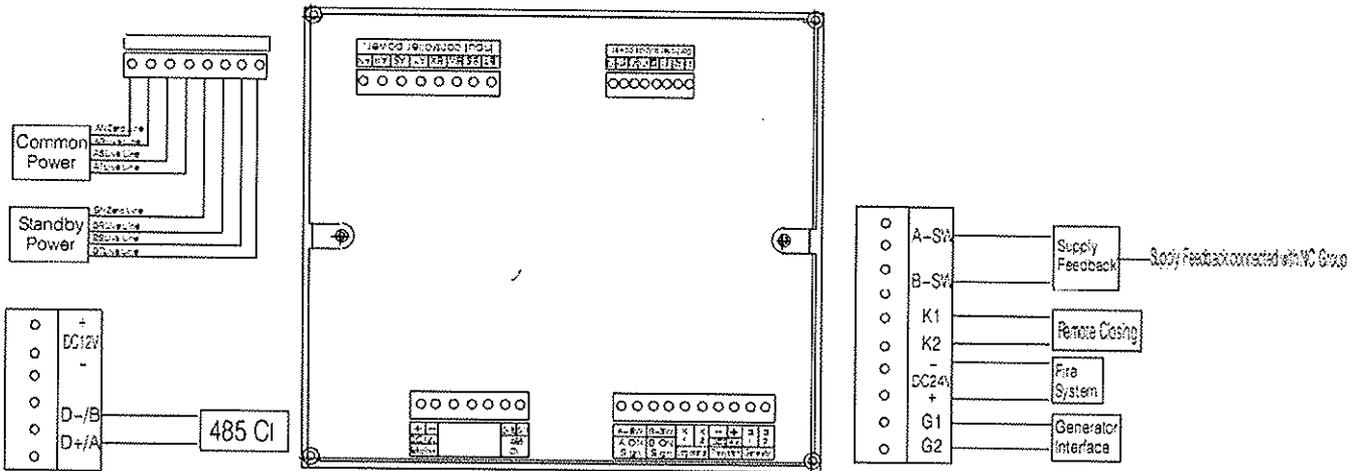
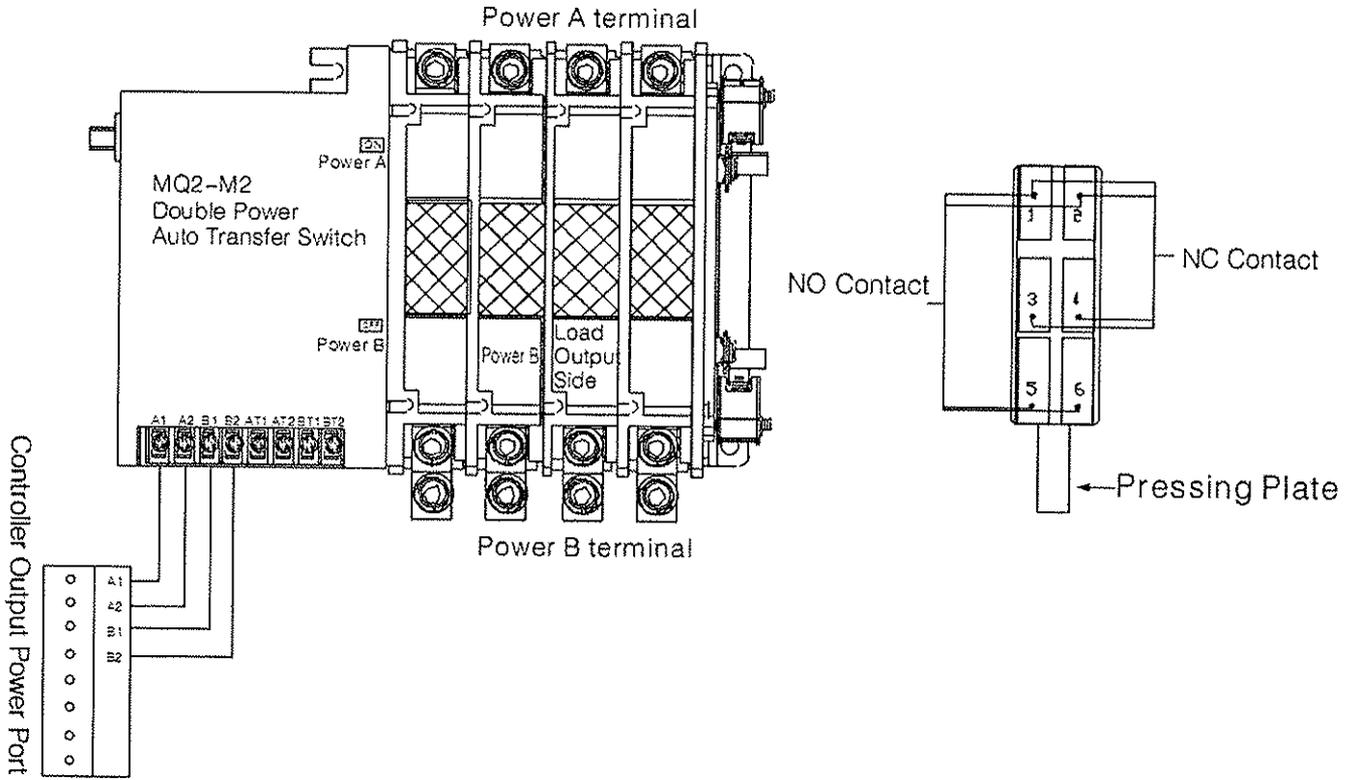
**五: Controller and switch connecting diagram**

MQ2-M3 series dual power Automatic Transfer Switch and LCD controller connecting diagram



# MQ2 Series Automatic Transfer Switch LCD Controller

MQ2-M2 series dual power Automatic Transfer Switch and LCD controller connecting diagram



六、Controller size chart

