BC8002A Installation and Operating Instruction

SIEMENS

Building Technologies

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CHAPTER 1 DESCRIPTION

1. Introduction of BC8002A System

- Comply with UL864
- Compatible with BDS A series of field devices
- Large 10.4” LCD with backlight
- Special patented processing arithmetic enhances immunity to environment influences
- Easy operation with Windows-style menu
- Advanced 32-bit ARM-based microprocessor system
- Embedded multitasking operating system provides high operation reliability
- Analogue curve can show real-time changes of parameters of every detection point
- Configuration either via control panel or via PC tool
- Auto-mapping of configuration files makes commissioning simple and easy
- Multiple-window display allows easy view of different kinds of information
- Every event occurred is recorded in history memory, up to 1000 events
- Easy upload/download of configuration file through USB port
- Real-time automatic polling to detect trouble
- Free logic programming either through operation panel on site or through PC-tool to meet all kinds of logic requirements of different users
- 2 OC outputs connect to relay – Resistive, 2 Notification Appliance Circuits (1.5 A for each NAC)
- Enhances anti-interference ability of the system against environmental influences
- Using SMT technology and modularity of design allow easy function expansion for future development
- Common grounding trouble supervision (0.1 ohm impedance)
- Advanced power saving technology
- Reliable and steady 24VDC power supply built-in
- Main power/Battery/Battery charger monitoring
- Reliable field wires protection against short, EMI, ESD, EMC

2. Performance Parameters

Items		BC8002A Wall-mounted
Max. number of connectable line cards		3
Total consumption of detection line		1A
LCD display		640×480 pixel, back light
Digital I/O's	Nr. of monitored OC outputs (40mA @24VDC)	2
	Nr. of monitored inputs	2
Nr. of monitored NAC (1.5A @24VDC)		2
Max. number of history records		1,000
Auto mapping		Yes
Backup battery		12VDC, 40Ah×2
Upload/download port		USB 1.1
AC power input		120 VAC/60Hz/ 1.9 A 240VAC//50Hz/ 900mA
Dimensions, in mm (inches)		520×700×225(20.4×27.5×8.86)
Weight, in: kg (excluding battery)		22
Alarm response time		<10s
AC fuse capacity		5.0 A
Battery fuse capacity		10.0A
Operating temperature		0℃ ～ +49℃
Storage temperature		–10℃ ～ +50℃
Relative humidity		≤93%（32±2℃）
Application environment		Indoor and Dry

3. BC8002A External Structure

4. Compatible Devices Table

No.	Type	Description	UL Listed	Standard
1.	BDS031A	Addressable heat detector	S24105	UL521
2.	BDS051A	Addressable smoke detector	S24106	UL268
3.	BDS121A	Manual signaling box	S24107	UL38
4.	BDS132A	Input module	S24303	UL864
5.	BDS221A	Output module	S24304	UL864
6.	ZH-MC *	Multitone horn strobe(red)	S5568	UL1971&464
7.	P2R8 **	SpectrAlert horn/strobe	S5512	UL1971&464
8.	DSC	Dual sync control module	S5568	UL864
9.	MDL	Synchronous module	S5512	UL864

NOTE * = MAX number of 10 devices utilized by BC8002A .

NOTE ** = Max number of 12 devices utilized by BC8002A.

5. System Structure

BCM8001ALine Circuit

Max current: 100mA @ 24VDC

Max line impedance: 30ohm

10nF Capacitance

Class B, Style 3.5

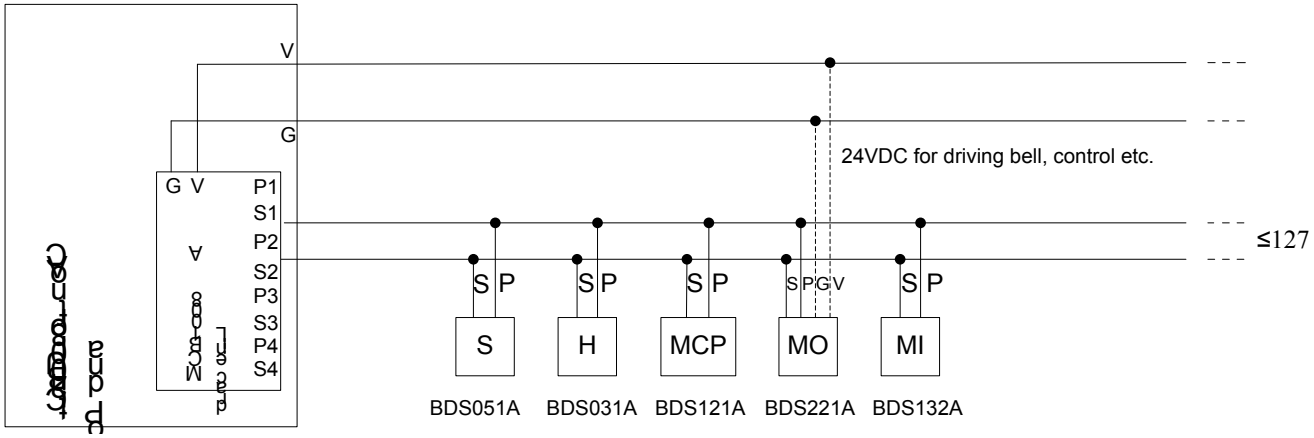


Figure 1-1 Control unit connection

CHAPTER 2 INSTALLATION

1. Introduction

This section provides general instructions for mounting and wiring of the BC8002A control unit.

Read this section before installing the equipment to ensure proper installation. If you are not familiar with the BC8002A system, be sure to ask Siemens Building Technologies, Inc. technical support or an authorized representative if you have any questions.

Install and use the BC8002A fire alarm system in accordance with corresponding local regulation in your country or this installation manual for your reference.

2. Installation

Always remove power (battery or AC) and wait at least 10 seconds to allow the supply voltages to decay before installing or removing any module or cable or wring.

Prior to installation consider the following:

- Mounting height for visual and manual access to the LCD displayed.
- Weight and size of the enclosure.
- Local code and regulation.

The procedure of installing the BC8002A:

1. Select a clean, dry, shock and vibration free surface.
2. Position the BC8002A so that front panel can be opened freely.
3. Mark the location of the four mounting bolts on the wall. (Refer to figure 2-1)
4. Drill the four holes located in the previous step and push screws into the bolts. Leaving a small gap between the wall and each screw.
5. Remove the knockouts on the back for the entry of field wring.
6. Place the BC8002A over the screws and allow it slide down over the screws.
7. Pull cable into the BC8002A control unit. Do not dress the wiring until the location of all the equipment is known.
8. Tighten all four screws securely against the back wall of BC8002A.
9. Place battery into proper location and connect with power supply properly. Refer to figure 5.
10. Close the front cover and lock it with key. Keep the key at a safety place.

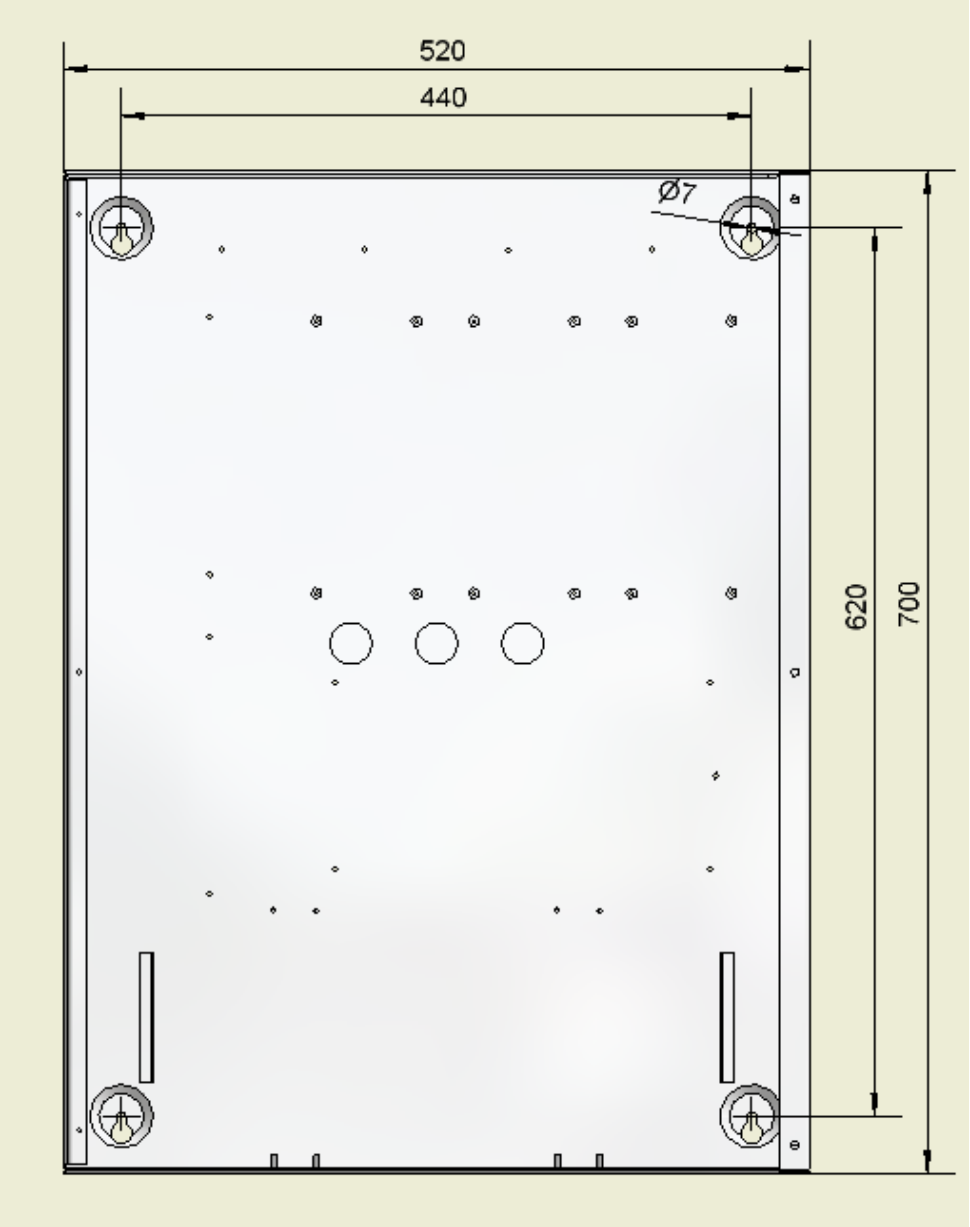


Figure2-1 Mounting holes for BC8002A (in:mm)

3. Wiring

Install the wirings to the proper location. Refer to figure 2, 3, and 4.

Note:

1. All wirings must be in accordance with Article 760 of NEC or local building codes.
2. All wirings are UL recognized.
3. All wirings capacity are 18AWG.

Caution!

Observe positive and negative poles!
Make sure NO SHORT TO GND and NO SHORT CIRCUIT when connection!
Power limited and Non-Power limited wiring should be separated by min. 0.25 in gaps.

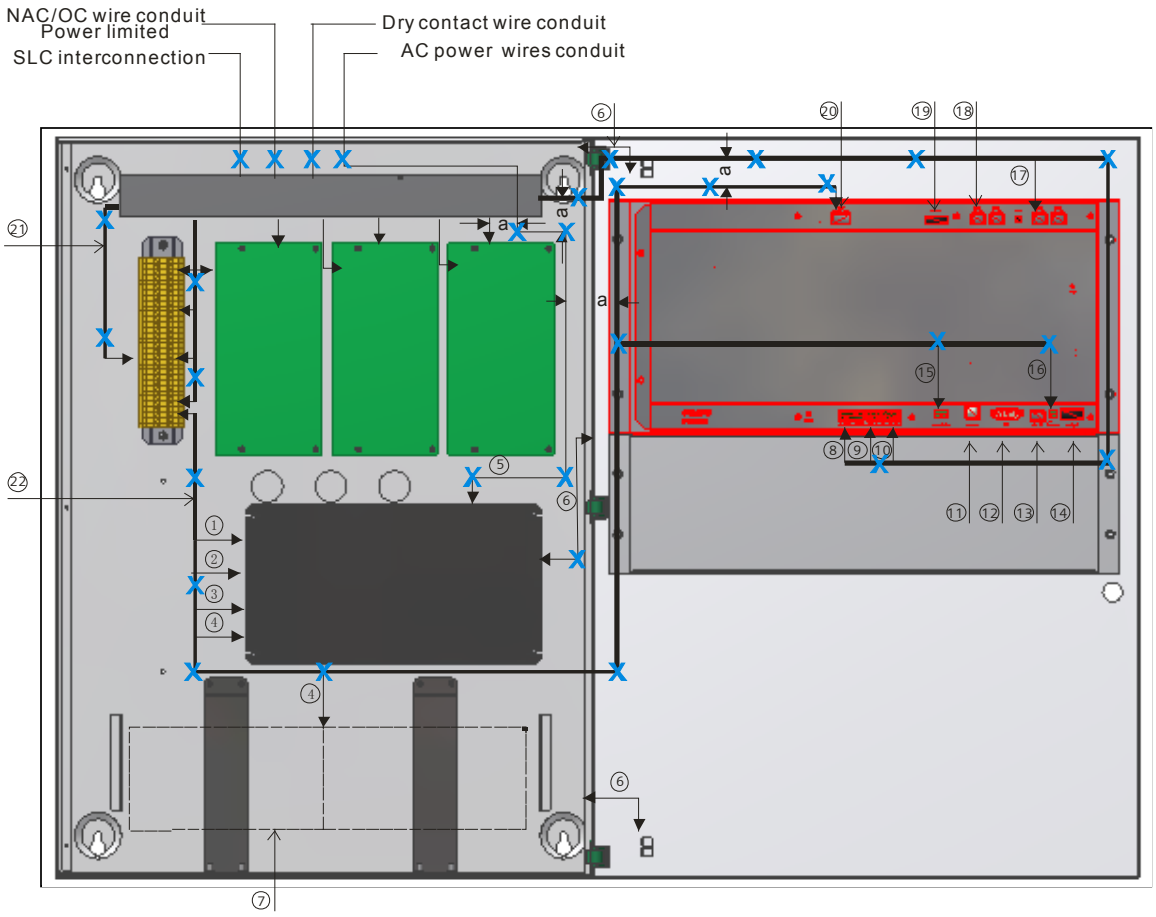


Figure 2-2 Internal connection

Note:

1. 24V DC to BT8002A and SLC Non power limited
2. 5V DC-Not applicable
3. Power monitor for Main and Back up power
4. Batteries connection Installation detailed see Figure2-5
5. AC power wire
6. Grounding wire
7. Batteries 24V DC 40 AH
8. NAC1, 2- Power limited
9. OC1, 2- Power limited
10. Dry Contact 1, 2- Only power limited input
11. USB only for Programming
12. FMS -Not applicable
13. Printer power- Not applicable
14. Printer signal- Not applicable
15. Power monitor for Main and Back up power input on BT8002A
16. 5V DC- Not applicable
17. B-Bus
18. A-Bus -Not applicable
19. Dip-switch for address (Binary system code)
20. 24V DC wire input on BT8002A
21. Field wiring terminal Total current is 1A

22. 24 V DC output to SLC interconnection - non power limited

“a” in the diagram means Min. 0.25 inch gap away from power limited wires to the other non power limited wires

Any gap from Power Limited wires to the other Non Power Limited wires shall be min. 0.25 inch.

“X” 31 cable ties which need to be used to secure the wiring.

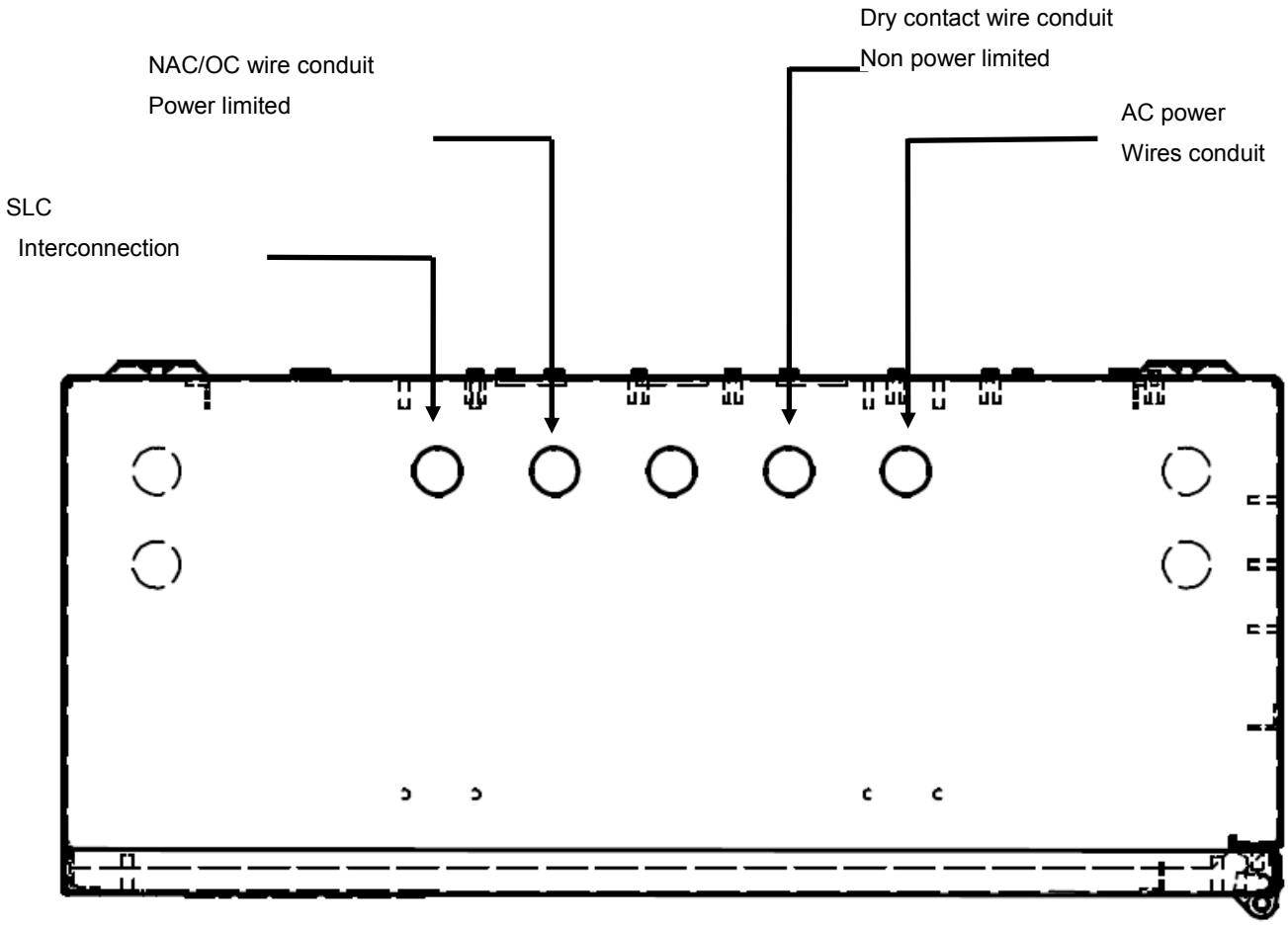
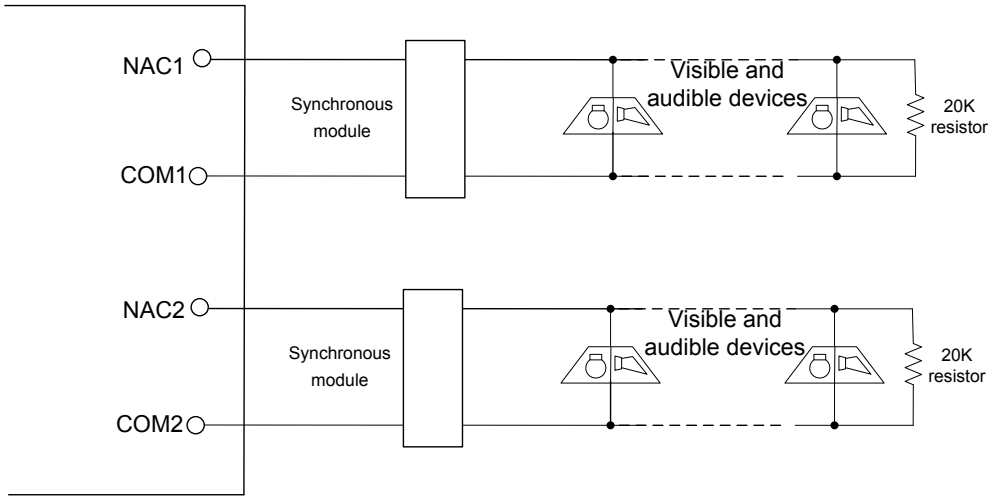


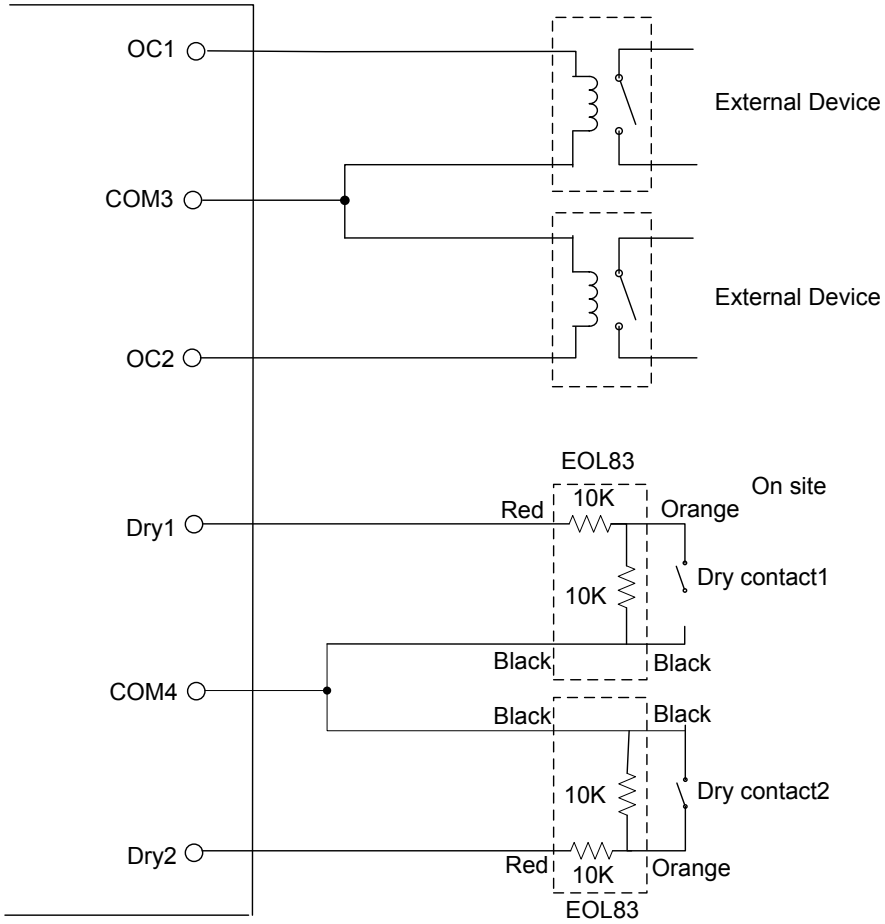
Figure 2-3 The top view of the wire conduits



Class B Style Y
24VDC/1.5A for each NAC,
Supervised
Power Limited
Regulated 24
Line impedance: Max. 4ohm

Figure 2-4

BC8002A NAC wiring diagram (part No. of 20K resistor: R123200)



24VDC/400~2000ohm for each OC
Supervised
Power Limited
Programmable
Line impedance: Max. 50ohm

5.0VDC/0.3mA for each dry input
Supervised
Line impedance: Max. 50 ohm
Dry1 and Dry2 require Power Limited Inputs

Figure 2-5

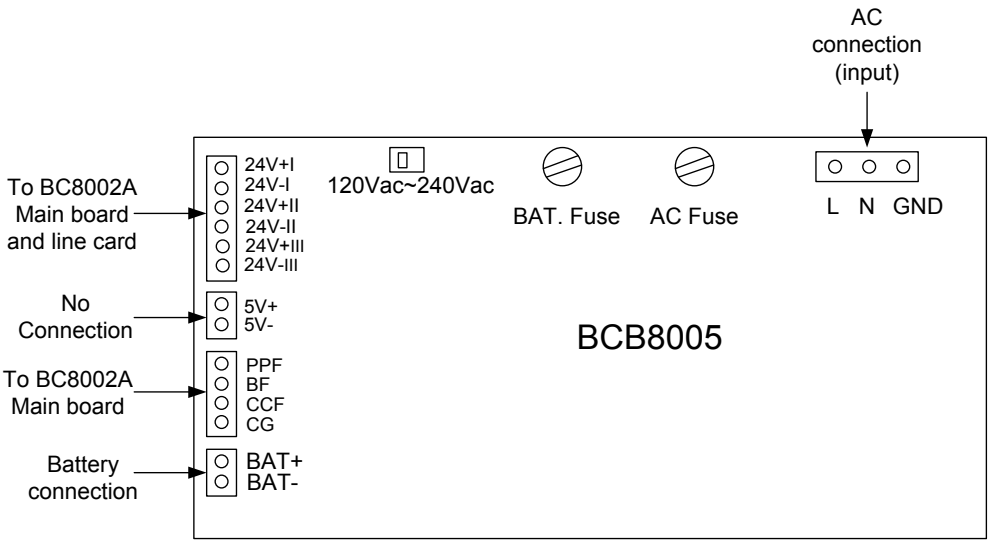
BC8002A output/input wiring diagram

4. Power Supply

Model: BCB8005

Features:

- Universal AC power input 120VAC/60Hz, 240VAC/50Hz
- Alternative AC power switch
- Power outputs of 6.0A@24VDC
- AC fuse capacity: 5.0A; Battery fuse capacity: 10.0A
- Auto recoverable current protection circuit for overload and short circuit



Terminals blocks:

L/N/GND: AC input connector from external power supply. These connectors are non-power limited.

Input voltages: 120VAC/60Hz, 240VAC/50Hz

120Vac~240Vac: AC input switch for 120V or 240V.

24V+Ⅰ/24V-Ⅰ: 24VDC output terminals.

24V+Ⅱ/24V-Ⅱ: 24VDC output terminals.

24V+Ⅲ/24V-Ⅲ: 24VDC output terminals.

5V+/5V-: Not connected.

PPF: Main power fault. When main power fault happens, a fault event will be reported on fault window.

BF: Battery fault. When battery fault happens, a fault event will be reported on fault window.

CCF: Charge circuit fault. When charge circuit fault happens, a fault event will be reported on fault window.

CG: Ground of PPF, BF and CCF.

BAT+/BAT-: Connects the back-up battery to the power supply. These connectors are non-power limited.

AC fuse: To change AC fuse (5.0A).

BAT. fuse: To change battery fuse (10.0A).

Technical Specification:

Items	Standard value
Input voltage	120/240 VAC
Input frequency	60/50 Hz
Rated input current	1.9 A @ 120VAC, 900mA @ 240VAC
2 Output	6A @ 24VDC

5. Battery

Maximum battery circuit current	Charging: 3.1A Discharging: 8.0A
Expected battery standby operational times	24hours and 5 minutes alarm
Capacity	Sealed Leaded Acid, 12VDC,40Ah×2
Dimension(in: mm)	197×165×170(L×W×H)

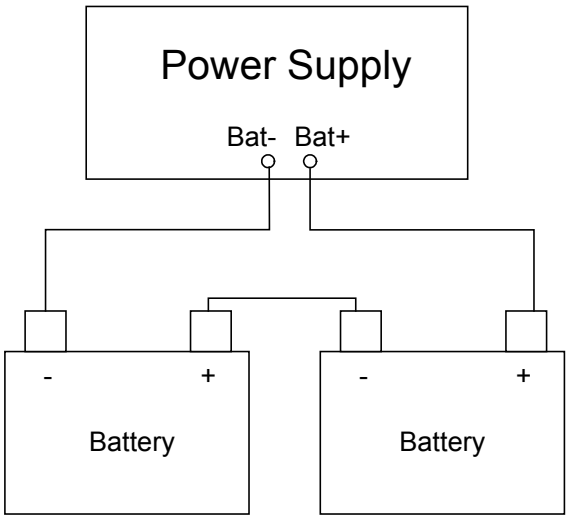


Figure 2-6
Battery and AC power connection diagram

Battery Maintenance

- Check battery at certain time, if the following things happen, eg. function is not normal, housing is distorted, liquid release, the battery must be changed. If the battery is dirty, please use towel with warm water to clean it. Do not use petrol, or chemical liquid.
- To be stored at -10℃ ~ +50℃ temperature and dry place.
- To be stored at full chargeable status. To be charged before being used because of self discharge.

Power supply load calculation form

No.	Type	Description	Quantity	Quiescent current(mA)	Max. current(mA)	Total Quiescent current(mA)
1.	BDS031A	Addressable heat detector		0.8	1.0	
2.	BDS051A	Addressable smoke detector		0.8	1.0	
3.	BDS121A	Manual signaling box		0.8	1.0	
4.	BC8002A	Control Unit		660.0/120V	1283.0/120V	
				330.0/240V	642.0/240V	
5.	BDS132A	Input Module		1.0	3.0	
6.	BDS221A	Output Module		1.0	3.0	
7.	ZH-MC *	Multitone horn Strobe(red)		0	200.0	
8.	DSC	Dual sync control module		0	55.0	
9.	P2R8 **	SpectrAlert horn/strobe		0	245.0	
10.	MDL	Sync-Circuit module		0	12.0	

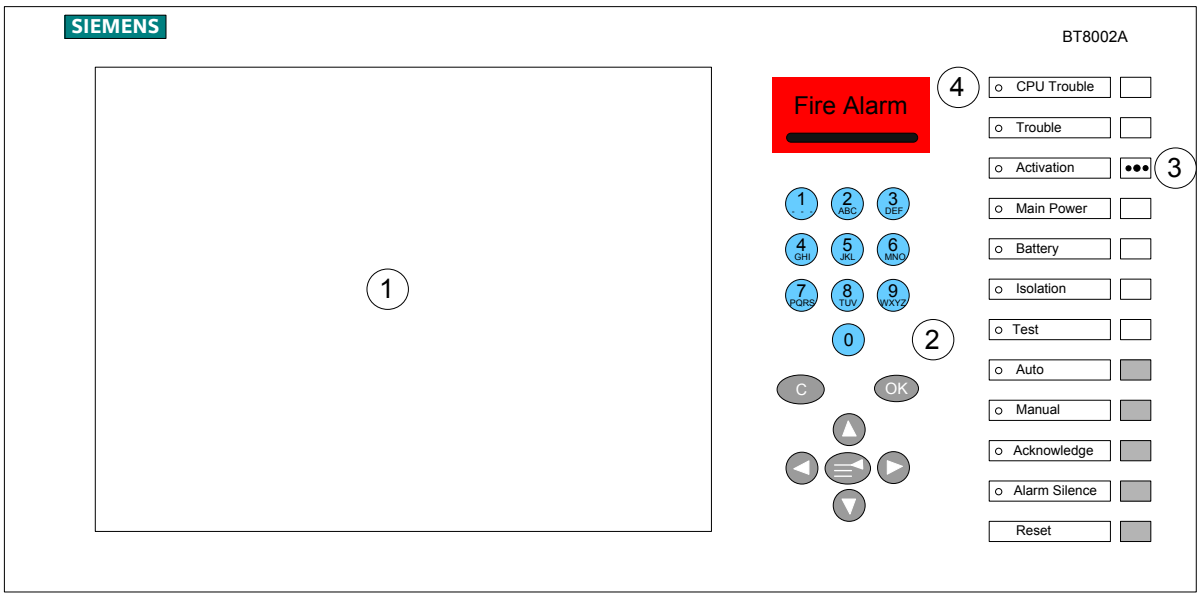
Total System Current: 1 A

NOTE * = MAX number of 10 devices utilized by BC8002A.

NOTE ** = Max number of 12 devices utilized by BC8002A.

CHAPTER 3 OPERATION

1. Interface Overview



① LCD screen

② Keyboard

- Digit keys are used to input digits and letters.
- © key is used for cancel and return, OK key is used for confirm and enter.
- key is a menu selection key.
- The right direction keys are used to switch active windows. Press the up/down direction key for a certain time can move cursor by page.
- The left direction key also can be used to delete wrong input.

③ Buzzer

This product incorporates field-programmable software. In order for the product to comply with the requirements in the standard for Control Units and accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.

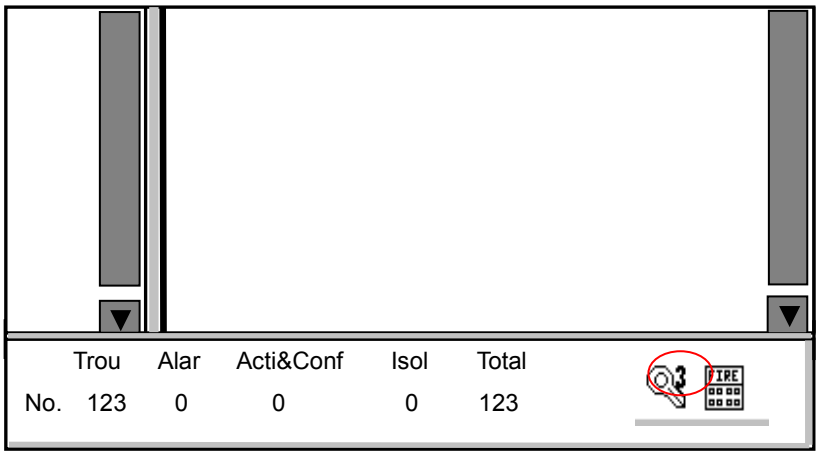
Program feature or option	Permitted in UL 864	Possible settings	Setting permitted in UL 864
BUZZER VOLUME	N	Setting of “0”	N

④ LED Indicators

- Fire Alarm: If no fire alarm occurs, the fire alarm indicator is off. When there is fire alarm, the indicator lights up. After all the fire alarm events are eliminated, press ”Reset” button and the fire alarm indicator is off.
- CPU Trouble: When system hardware or software can not work normally, the indictor is on.
- Trouble: When trouble occurs, the indicator is on. After all the troubles are removed, the indicator will be off.
- Activation: When any equipment (such as output module or output port on main board) is activated or confirmed, the indicator is on. When system is reset, the indicator will be off.
- Main power: When the main power provides power for controller, the indicator is on. When there is no power supply, the indicator will be off.

- Battery: When the built-in batteries are being used for power supply, the indicator is on.
- Isolation: When any device is isolated, the indicator is on.
- Test: When any device is being tested or walk-tested, the indicator is on.
- Auto: The button can only be operated in level 2 and 3 user. When the indicator is on, all the interlocking devices can be interlocked by controller according to the logic relationship.
- Manual: The button can only be used in level 2 and 3 user. When the indicator is on, all the interlocking devices can be interlocked manually. Automatic interlocking cannot be performed under the manual mode.
- Acknowledge: The button can only be used in level 2 and 3 user. When event occurs, acknowledge indicator is flashing and buzzer is sounding. First login to the corresponding view, then press acknowledge button, buzzer is silent and the indicator is on steady. After all the events have been removed or reset controller, the indicator will be off.
- Alarm Silence: The button can only be used in level 2 and 3 user interfaces. When alarm occurs, NAC output devices is activated and the indicator will flash. When the alarm silence button is pressed once, NAC alarm stops and the indicator is on. When the alarm silence button is pressed once again, NAC alarm starts and the indicator is flash again. After all the alarm events have been removed or reset controller, the indicator will be off.
- Reset: The button can only be used in level 2 and 3 user interfaces. After all events are acknowledged, when the button is pressed the controller will eliminate all events and reset the activated device to the normal mode.

2. User Levels

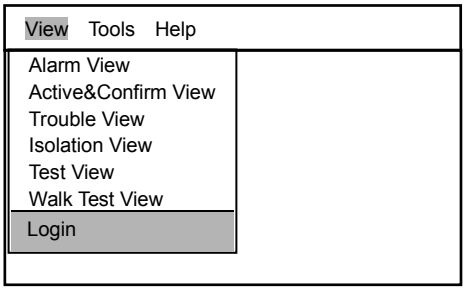


- BC8002A includes three kinds of user levels. The user level is displayed at the right corner of the screen (as shown with red round).
  - ◊ Level 1 is default for everyone.
  - ◊ Level 2 is for safeguard.
  - ◊ Level 3 is for commissioning person.
- Different user levels have different authorizations and user interface is also different.

Items	Level I	Level II	Level III
Login and Logout	Log in	Logout	Logout
Query Real-time Event	√	√	√
Query History Record		√	√
Active Device		√	√
De-active Device		√	√
Isolate Device		√	√
Open Device		√	√
Test Device		√	√
Walk-test Device		√	√
Restore Device		√	√
Adjust Buzzer Volume		√	√
Adjust LCD Contrast	√	√	√
Set LCD off by Timeout			√
Set System Time		√	√
Set Auto/Manual Mode		√	√
Edit Parameter			√
Edit Logic Statement			√
Save Configuration			√
Automap Device			√
Silence Speakers		√	√
Self-test			√
Acknowledge Events	√	√	√
Reset Event		√	√

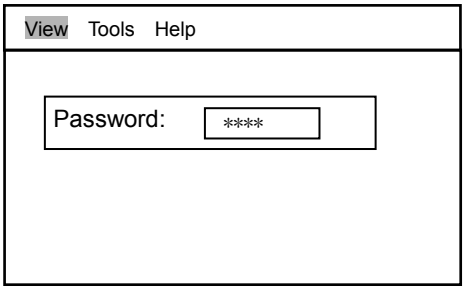
2.1 How to login

1. Press ⊜ key to choose “View” option.



2. Press “↓” to choose “Log in” and press “OK” key.
   Password input window is displayed.

3. Input corresponding password using number key and Press “OK” key.
   If the proper password is input, you can login level 2/3.
   (Press “←” to delete the wrong input.)



Notes:
The default password for level 2 is 1234 and 4321 for level 3. The password can be changed by configuration tool BF8001.

2.2 How to logout

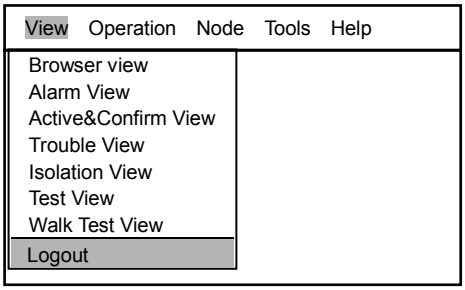
There are 2 kinds of logout:

- Logout by timeout
- Logout by menu

Logout by timeout: user level is logout to user level 1 automatically if no key is pressed within a certain time. (Timeout is set by BF8001 tool)

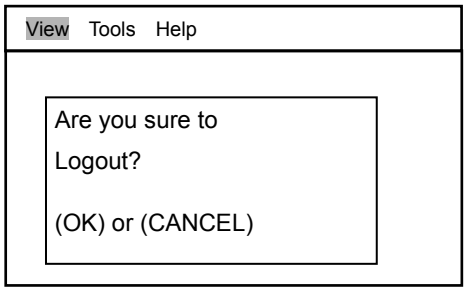
Logout by menu:

1. Press ⊜ key to choose “View” option.



2. Press “↓” to choose “Logout” and press “OK” key.
   Logout window is displayed.

3. Press “OK” to logout.



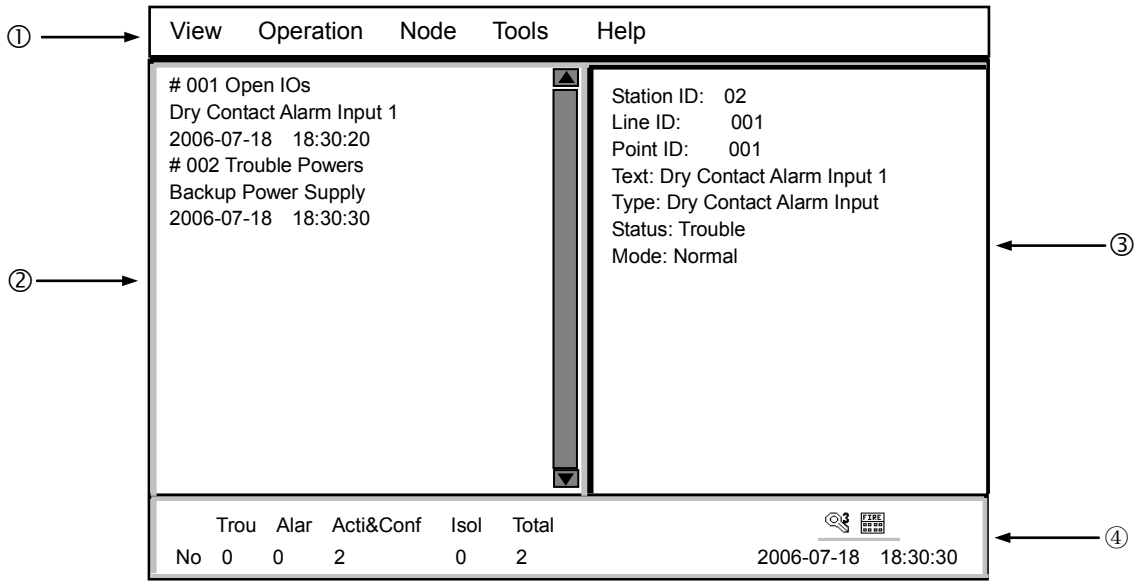
Notes:

（1） If current user interface is the first level, operators can directly log in second or third user level. If current user interface is the second level (or third level), operators must return to the first user level, and then log in the third level (or second level) again.

（2） If there is no operation or events within pre-set time (timeout is set by BF8001), LCD back lighting will be turned off automatically. Press any key to turn on backlight.

（3） In the interface of the 2/3 user level, if no operation or no events happen within pre-set time (timeout is set by BF8001 or by station property of control unit), interface will switch to the first user level automatically.

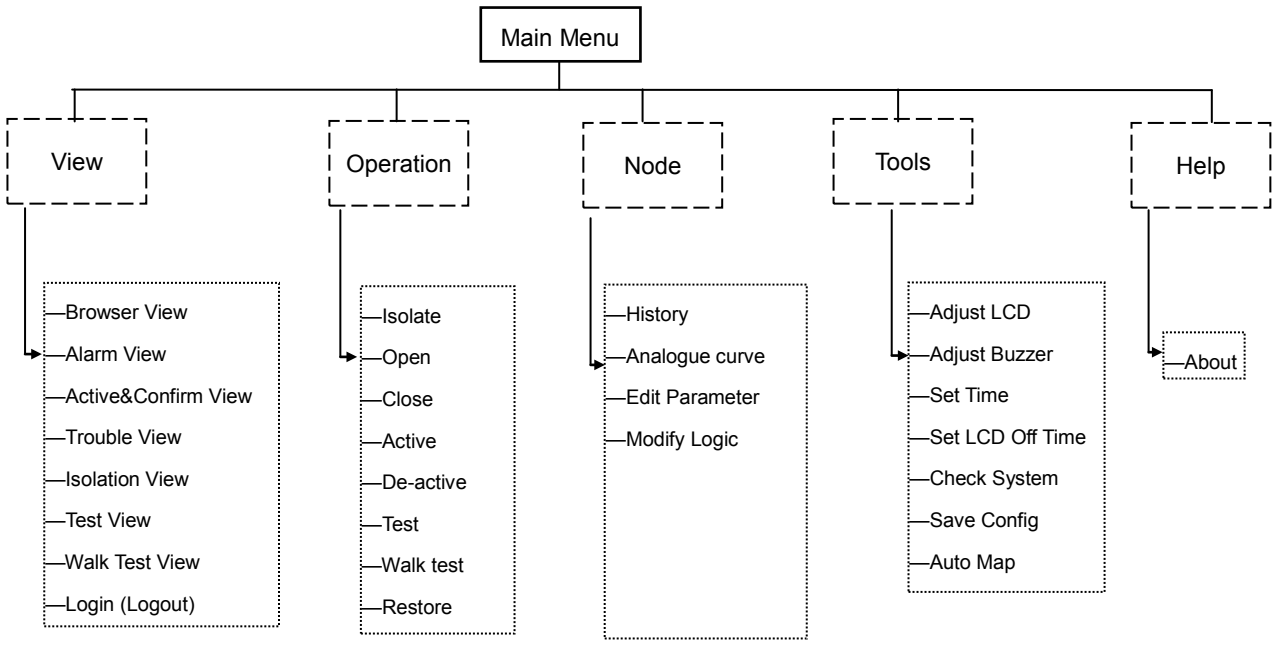
3. LCD Overview



BC8002A has 4 windows on LCD: menu window, browse window, display window and statistics window. The right direction key is used to switch active window among the windows. Only when the window is at active status, you can operate its items.

① is menu window:

- ◊ Include view, operation, node, tools and help sub-menu.
- ◊ Different menu items are displayed when different level user log in.



② is browse window:

◊ To look through all events current information: alarm, active & confirm, trouble, isolation, test and walk test.

◊ At user level 2 or 3, node tree can be displayed also.

◊ Current status is displayed based on the following priority: alarm → trouble → isolate → active & confirm → normal.

③ is display window:

◊ When a point in browse window is selected, its property is displayed in the display window, including: address, type, status(alarm/fault/isolation/activation), mode(test/normal) etc.

◊ History records information are displayed in the display window when you check history record.

④ is statistics window:

◊ Provide real time statistics information: alarm, trouble, active & confirm and isolation.

◊ Indicate current user level, time and system status.

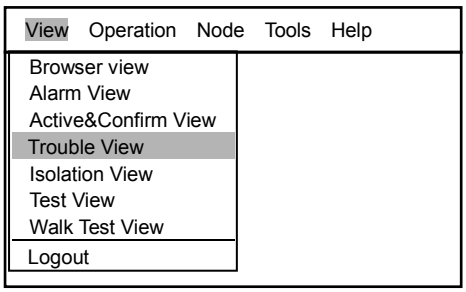
4. Query Real Time Information

BC8002A includes 6 types of real time information:

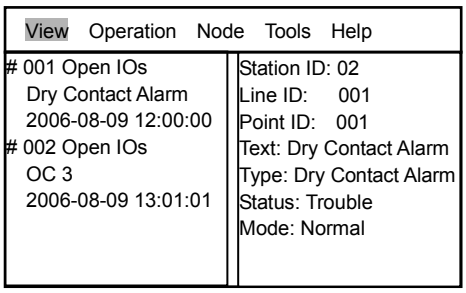
Type of real time information	Priority
Fire Alarm	1
Trouble	2
Isolation	3
Activation	4
Test	5
Walk-test	5

How to query real time information:

1. Press ☰ key to choose “View” option.



2. Press “ ↓ ” to choose one kind of information and press “OK” key.
   All the queried information is displayed on the browse window. Press “ ↓ ” / “ ↑ ” to scroll down/up.
   When one item is chosen, its corresponding property will be displayed on the display window.



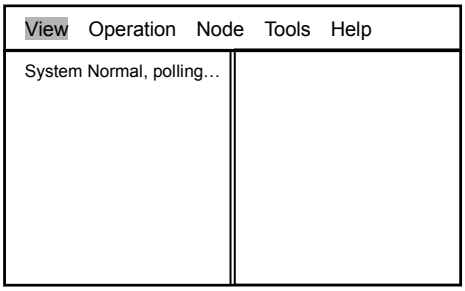
Notes:

- “#”: means the event was acknowledged; “*”: means the event was not acknowledged.
- “001”: means order of total event.
- “Open”: means event type.
- “IOs”: means the previous level of event occurred node.
- “Dry Contact Alarm Input 1” :means the node that event occurred.
- “2006-08-09 13:01:01”: means the time when the event occurred.

5. Normal Status

Normal status is:

- Power LED is on.
- No alarms, troubles, isolations, active, test, walk-test condition.
- Window is displayed as” Normal screen”.
- Auto or manual indicator is on

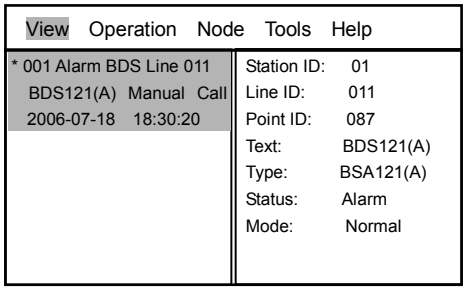


Normal screen

6. Fire Alarm Event Handling

Status:

- LCD is displaying fire event as “Fire alarm screen”.
- The red fire alarm LED is on.
- Acknowledge LED is flashing.
- Alarm Silence LED is flashing.
- The buzzer and NAC devices are sounding.



Fire alarm screen

How to do:

1. Press “Acknowledge” button to acknowledge the alarm:
   - If current user level is 1, login window will be popup automatically. After inputting level 2/3 password, press “OK” to enter alarm window. Press “Acknowledge” button to acknowledge the alarm. If more than one alarm occurs, all alarms are acknowledged at the same time:
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on
     - NAC devices are still sounding
   - If current user level is 2/3, all alarm events are acknowledged at the same time.:
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on
     - NAC devices are still sounding
2. Press “Alarm Silence” button once to stop NAC devices. These allow operator to deactivate or reactivate the NAC devices repeatedly. When NAC devices are activated, the alarm silence LED is flashing. When they are silenced, the alarm silence LED is off.
3. Read fire location on the display window.
4. Go to the indicated fire location to check and handle.
5. If the fire is emergency, call the local fire department at once. If the fire is minor incident, press “reset” to return to normal status.

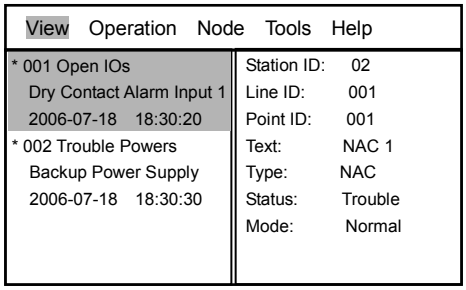
One or more alarms happen:

- One or more alarm locations
- First alarm message is selected
- Alarm message can be scrolled with “ ↓ ” / ” ↑ ” key

7. Trouble Event Handling

Status:

- LCD will display trouble event automatically as “Trouble Screen”.
- The trouble LED is on.
- Acknowledge LED is flashing.
- The buzzer is sounding.



Trouble screen

How to do:

1. Press “Acknowledge” button to acknowledge the trouble:
   - If current user level is 1, login window will be popup automatically. After inputting level 2/3 password, press “OK” to enter trouble window. Press “Acknowledge” button to acknowledge the trouble. If more than one trouble occurs, all trouble events are acknowledged at the same time.
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on
   - If current user level is 2/3, all trouble events are acknowledged at the same time.
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on

2. Read trouble location on the display.

3. Go to the indicated trouble location to check and handle.

If you can solve the problem by yourself, the trouble LED and acknowledge LED is off and trouble window is disappeared automatically. If you can not remove the trouble by yourself, please call your local service office of Siemens Building Technologies. But if a trouble event is acknowledged and it is not removed within 24 hours, the buzzer will resound. Now if you want to acknowledge it, you have to query trouble information (refer to “How to query real time information”) and press “Acknowledge” button, the trouble event can be acknowledged again. If the system consists of more than one controller, the other controllers have to be done as above steps one by one.

Note:

If current window is fire, a trouble occurs. The trouble event will not be displayed automatically because trouble priority is lower than fire priority. You have to query trouble information (refer to “How to query real time information”) and press “Acknowledge” button.

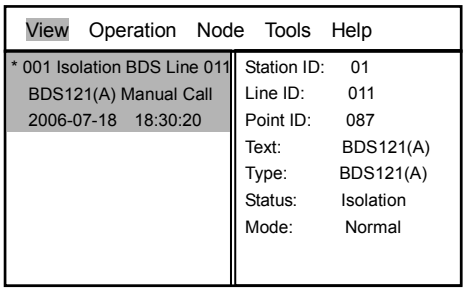
CPU Trouble:

When application software crash or CPU hardware is damaged, system can not work normally and CPU trouble LED is on. Any key is not available. Now you have to switch off power and call for service from Siemens Building Technologies.

8. Isolation Event Handling

Status:

- LCD will display isolation event automatically as “Isolation Screen”.
- The isolation LED is on.
- Acknowledge LED is flashing.
- The buzzer is sounding.



Isolation screen

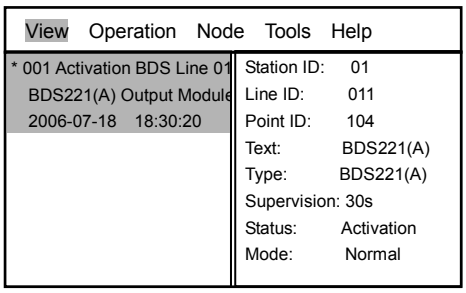
How to do:

1. Press “Acknowledge” button to acknowledge the isolation:
   - If current user level is 1, login window will be popup automatically. After inputting level 2/3 password, press “OK” to enter trouble window. Press “Acknowledge” button to acknowledge the isolation. If more than one isolation occur, all isolation events are acknowledged at the same time.
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on
   - If current user level is 2/3, all isolation events are acknowledged at the same time.
     - Symbol “*“ will be changed to “#” automatically
     - Buzzer is silent
     - Acknowledge LED will change from flashing to steady on
2. When the isolated point is open, the panel will revert to normal status automatically.

9. Activation Event Handling

Status:

- LCD will display activation event automatically as “Activation Screen”.
- The activation LED is on.
- Acknowledge LED is flashing.
- The buzzer is sounding.



Activation screen

How to do:

1.Press “Acknowledge” button to acknowledge the activation:

- If current user level is 1, login window will be popup automatically. After inputting level 2/3 password, press “OK” to enter trouble window. Press “Acknowledge” button to acknowledge the activation. If more than one activation occur, all activation events are acknowledged at the same time.
  - Symbol “*“ will be changed to “#” automatically
  - Buzzer is silent
  - Acknowledge LED will change from flashing to steady on
- If current user level is 2/3, all activation events are acknowledged at the same time.
  - Symbol “*“ will be changed to “#” automatically
  - Buzzer is silent
  - Acknowledge LED will change from flashing to steady on

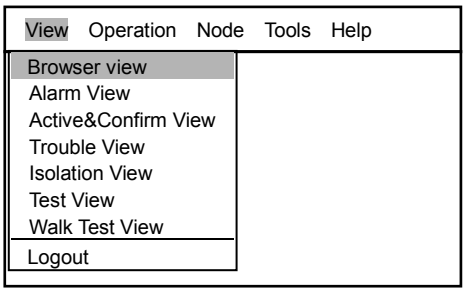
2.When the activated point is de-activated, the panel will revert to normal status.

10. History Record

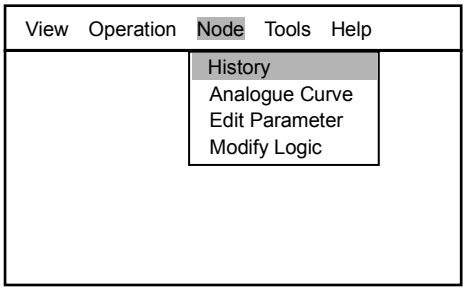
BC8002A includes 4 types of history record: alarm, active&confirm, trouble and isolation. Only level 2/3 user can query history record. If current level is 1, login should be done first (Refer to “login” on page 14) and then follow these steps:

How to query history record:

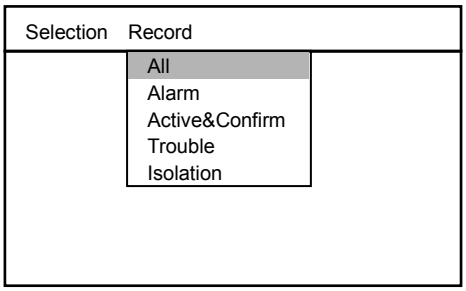
1. Press “ ” to active menu window.
   The options of “View” sub-menu is displayed.



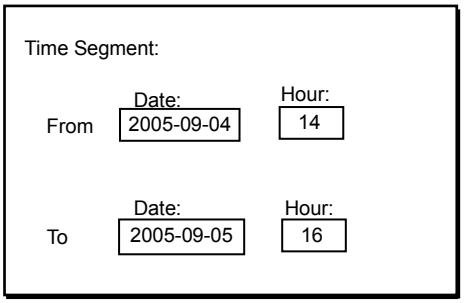
2. Press “→” to choose “Node” and “History”, press “OK” key.



3. Press “ ” and “→” to choose “Record” .

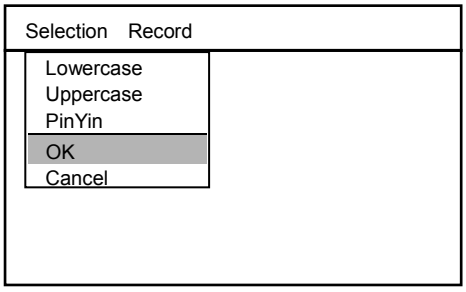


4. Press “↓” to select one desired event type and press “OK” key.
   Time segment window is displayed.



5. Input desired time segment and press “OK” key.
   All queried history records are listed in left window. If you want to query all time history record, press ”C”. Press “↓” / ”↑” to scroll down/up. The property of selected point is displayed in right window.

   → Press “ ” and choose “Cancel”, press “OK” to return to previous window.



11. Operation

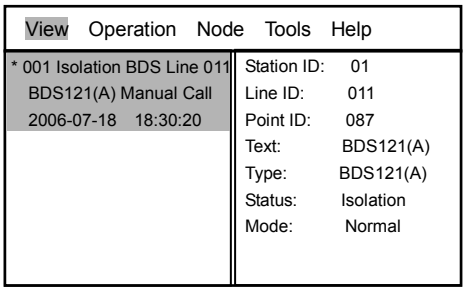
This function can be done by level 2/3 user. If current level is 1, login should be done first (Refer to “login” on page 14).

Device Type		Operation Item			
		Isolate/ Open	**Activate/ Deactivate**	**Test/ Restore**	**WalkTest/ Restore**
Station		---	---	---	---
Line	**F-Bus**	√	---	√	√
Point	BDS031A Heat Detector BDS051A Smoke Detector BDS121A Manual Call Point BDS122A Hydrant Manual BDS132A Alarm Input BDS161 Collective Input Module	√	---	√	√
	BDS132 Technical Input Alarm Input Technical Input Dry Contact Alarm Input Dry Contact Technical Input	√	---	√	---
	BDS221A Output Module Output OC	√	√	√	---
	NAC	√	---	---	---
	Automap Point	√	---	---	---

“√” means can be done; “---” means can not be done.

How to isolate/open

Isolate line: This is only necessary in exceptional situations, for example, while some part of the construction is in process. As soon as conditions have returned to normal, the isolated line must be immediately restored to normal status again.
Isolate point: Only when the point is damaged or defective until it is isolated. An isolated point can not generate any messages. As soon as replacement is finished, the isolated point must be immediately restored to normal status again.



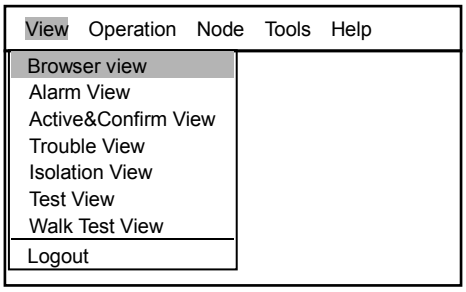
Isolation screen

Status:

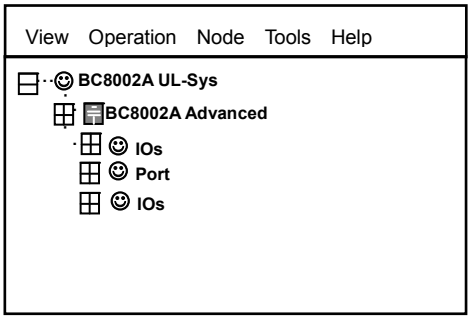
- LCD will display isolation event automatically as “Isolation Screen”.
- The isolation LED is on.
- Acknowledge LED is flashing.
- The buzzer is sounding.

How to isolate/open:

1. Press “ ” to active menu window.
   The options of “View” sub-menu is displayed.



2. Choose “Browser View” and press “OK” key.
   The tree structure of the system is displayed, including stations, lines, points.



3. Press “↓” to choose one desired line/point and press key.

4. Press “→” to choose “Operation” sub-menu.

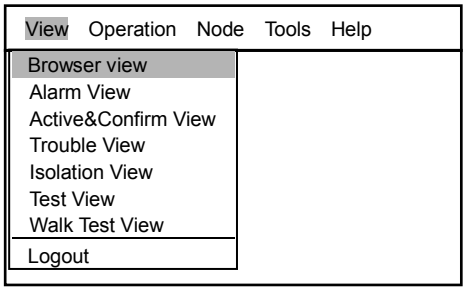
5. Press “↓” to choose “Isolate” / ”Open” and press “OK” key .
   The chosen line/point is isolated/open. Isolation status is shown/disappeared.

How to active/de-active

Function: To activate/de-activate OC, Output module manually from control unit.

Status:

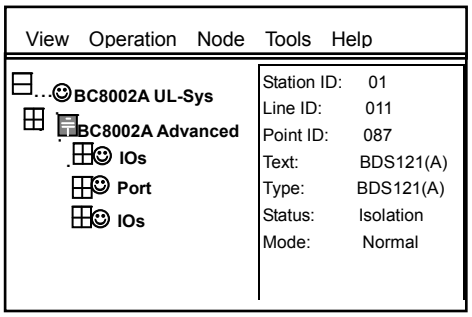
- LCD will display activation event automatically as “Active&Confirm Screen”.
- The Activation LED is on.
- Acknowledge LED is flashing.
- The Buzzer is sounding.



Sub-menu Screen

How to active/de-active:

1. Press “ ” to active menu window.
   The options of “View” sub-menu is displayed.



2. Choose “Browser View” and press “OK” key.
   The tree structure of the system is displayed, including stations, lines, points.

3. Press “↓” to choose one desired line/point and press key.

4. Press “→” to choose “Operation” sub-menu.

5. Press “↓” to choose “Active” / ”De-active” and press “OK” key.
   The chosen line/point is active/de-active. Activation status is shown/disappeared.

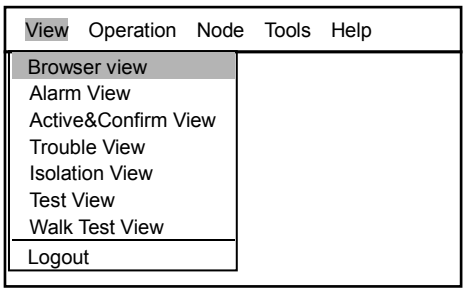
How to test/walk-test

Function: Allow to test the correct function of alarm devices. At test/walk-test mode alarm can be normally generated if alarm condition is fulfilled. But alarm devices are not really activated. After the test work is completed immediately restore the test mode. The test /walk-test events are not saved in history record.

The difference of test and walk-test:

Test: restore to normal mode manually.

Walk-test: restore to normal mode automatically after a certain time (timeout is set by BF8002A tools or by station property of control unit).



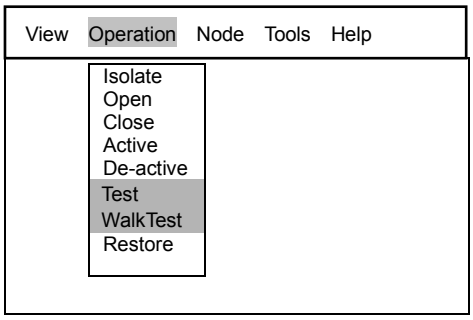
View Screen

Status:

- No message is displayed.

How to active/de-active:

1. Press " " to active menu window.
   The options of "View" sub-menu is displayed.



2. Press "→" to choose "Operation".

3. Press " ↓ " to choose "Test" or "Walk Test" and press "OK" key.

4. The foult could be displayed in the Browser window.

5. Press " ↓ " to choose one desired foult and press " " key.

6. Press "→" to choose "Operation" and press "OK" key.

7. Press " ↓ " to choose "restore" .
   The test status is disappeared.

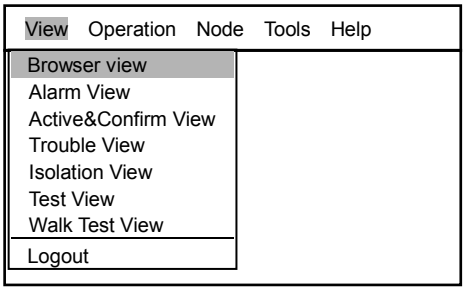
12. Configure

Functions: Configure system, included set system date & time, set LCD contrast, set volume of buzzer, set LCD switch off time, set Auto map, save configuration etc.

This function can be done by level 2/3 user. If current level is 1, login should be done first (Refer to “login” on page 15).

How to adjust the LCD

1. Press “ ” to enter main menu.
   Press the direction keys to select the pull-down Menu of “Tools”.
   The Tools menu is displayed.

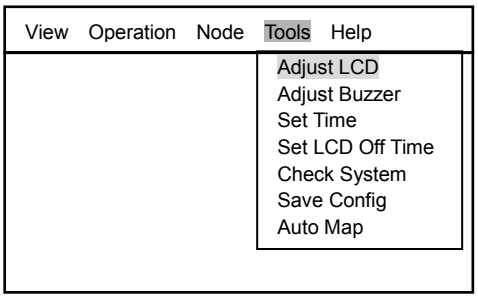


View Screen

2. Press “ ↓ ” to choose “Adjust LCD” and press “OK” key.
   Adjust window is displayed.

3. Press “ ↓ ” or “ ↑ ” adjust the brightness of LCD.

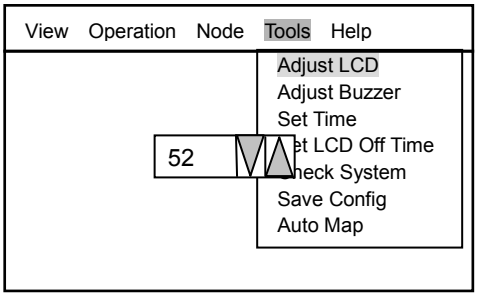
4. Press “OK” to confirm or press “ C “ to cancel the result.



Tools screen

Note:

Now the modified text is saved temporarily. If the control unit is reset, the modified text will be lost. If you want to save the modification for long time, please press the “Save Config” operation(refer to Page)

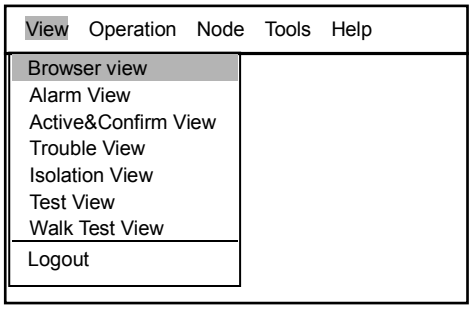


Adjust screen

How to adjust the buzzer volume

Function: Adjust controller's buzzer volume. Only level 2,3 user can operate it.

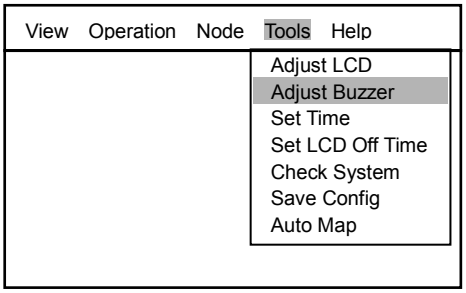
1. Press "≡" to enter main menu.
   The main menu is displayed.



View Screen

2. Press "→" to choose "Tools" and press " ↓ " to choose " Adjust Buzzer".
   Configure window is displayed.

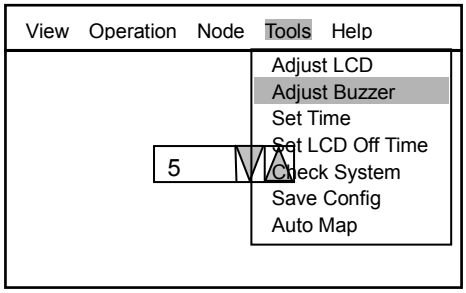
3. Press "OK" to into the configure screen.



Adjust Buzzer screen

4. Press " ↓ " to increase or press " ↑ " to decrease the value.
   Current buzzer volume is displayed.

5. Press "OK" key to save modification and return to previous window.

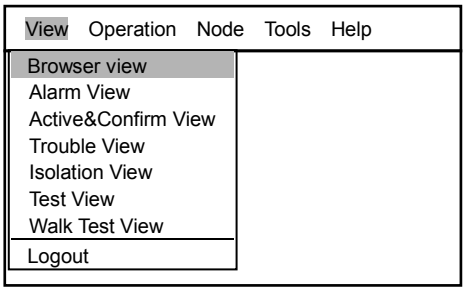


Configure screen

How to set date&time.

Function: Set system time. Only level 2,3 user can operate it.

1. Press "☰" to enter main menu.
   The main menu is displayed.

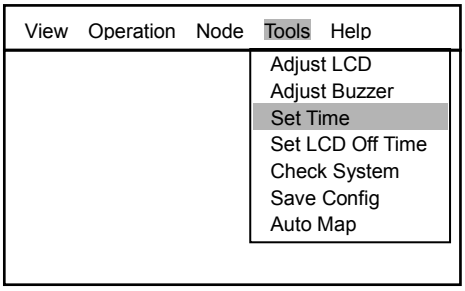


View Screen

2. Press →"" to choose "Tools" and press " ↓ " key to choose "Set Time ".
   Configure window is displayed.
   Current date and time is displayed.

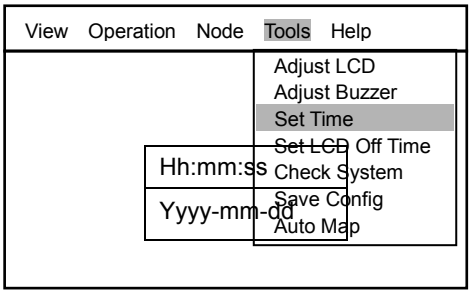
3. Press " ↓ "or " ↑ " to select Date or Time you want to set.

4. Press "←" to delete current date or time, and enter new date or time.
   Press the numbers key to input the Date or Time.



Set Time screen

5. Press "OK" key to save the modification and return to previous window.

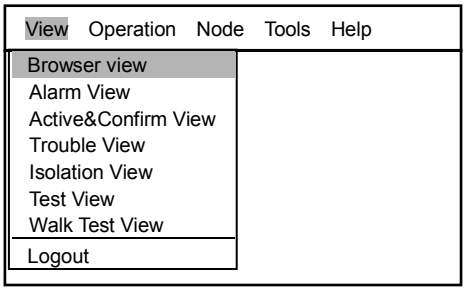


Set Time

How to set LCD off time

Function: Set LCD off time. Only level 3 user can operate it.

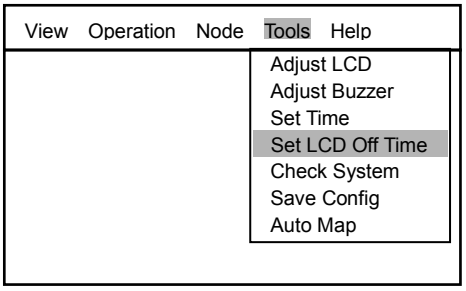
1. Press " ☰ " to enter main menu.
   The main menu is displayed.



View Screen

2. Press "→" to choose "Tools" and press " ↓ " to choose " Ser LCD Off Time" .
   Configure window is displayed.

3. Press the numbers keys to input the time.

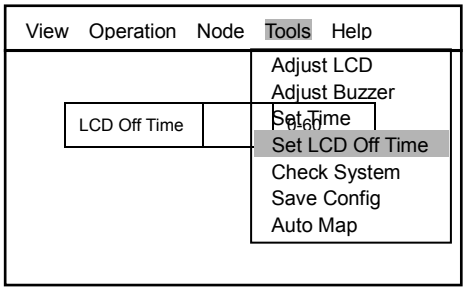


Set LCD Off Time screen

3. Press "OK" key to save modification and return to previous window.

Note:

The valid data is from 0 to 60 minutes. "0" means keep LCD as open status forever.

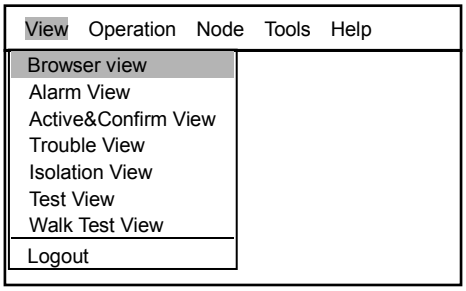


Set LCD Off Time screen

How to check system

Function: Check the working state of indicators, sound system, LCD and printer. Only level 3 user can operate it.

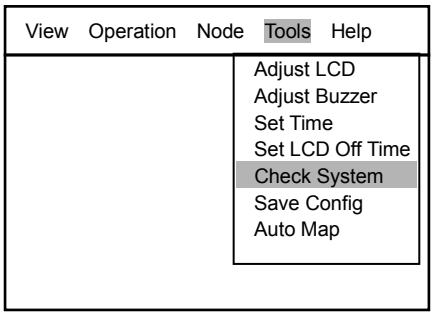
1. Press "≡" to enter main menu.
   The main menu is displayed.



View Screen

2. Press "→" to choose "Tools" and press " ↓ " to choose "Check System" .

3. Press "OK" key to confirm.



Check System

4. The system start check automatically .When system check start, all indicators on the panel will flash. The equipment concurrently issues various kinds of sound and the upper and lower screen of the LCD will experience one alternate black and white change once, printer will print automatically.

Note: Check criteria:

Indicator — The normal state is that all the indicators are on. If a indicator is not on, it means that the indicator is abnormal.

Sound — The normal state is buzzer issues all (four) kinds of sounds. If some tune cannot be issued, it shows that the sound system is abnormal.

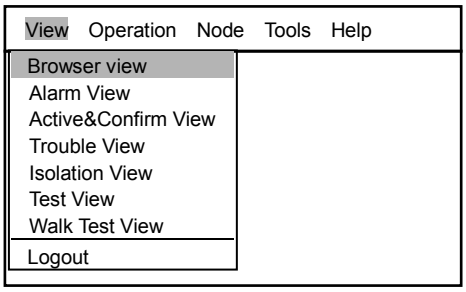
Screen — The normal state is all the screen areas are displayed normally.

Printer — The normal state is that the printer will print" printer is OK" automatically.

How to save config

Function: To permanently save the modification of property and logic expression of system, station, line and point. Otherwise the modification will be lost when the system reset.

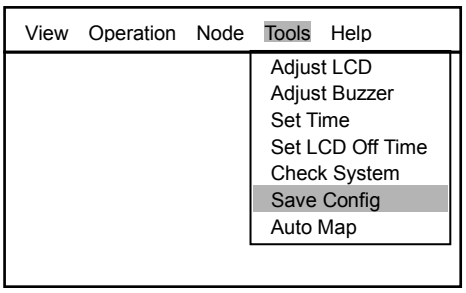
1. Press "≡" to enter main menu.
   The main menu is displayed.



2. Press "→" to choose "Tools" and press " ↓ " key to choose "Save-Cnfig".

Note:The system ask whether to continue this operation. (If you want to cancel this operation, press "C" to return to previous window.)

3. Press "OK" to confirm or " c" to cancel.
   Message "In processing, waiting…" is displayed. Finishing saving, the system return to previuos window automatically,

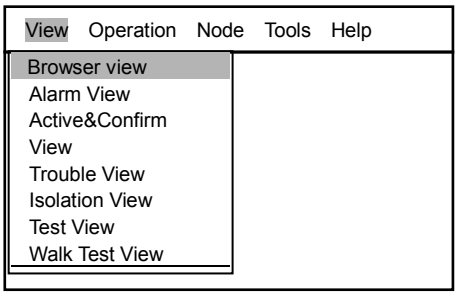


Save Config

How to automap

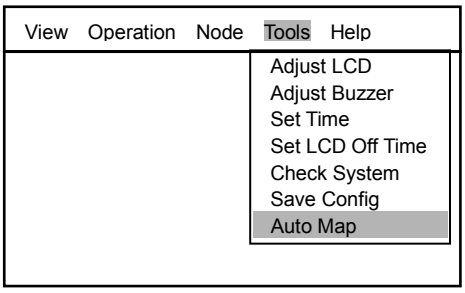
Function: Automatically map all the devices connected in the line to the controller.

1. Press "≡" to enter main menu
   The main menu is displayed.



2. Press "→" to choose "Tools" and press " ↓ " key to choose "Auto Map".
   The system ask whether to Automap the un-congigured. (If you want to cancel this operation, press "C" to return to previous window.)

3. Press "OK" key to confirm to automap.

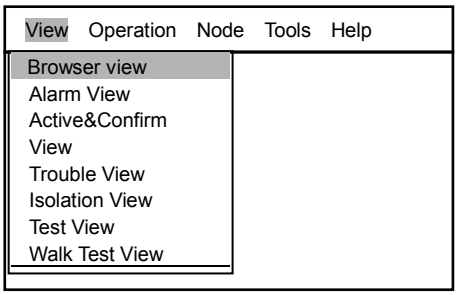


Auto Map screen

How to check analogue curve

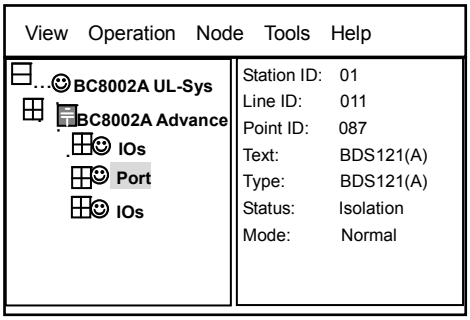
Function: control unit can display the lastest 12 minutes Analogue curve for checking real-time changes of parameters of every detection point.

1. Press “ ” to active menu window.
   The options of “View” sub-menu is displayed.

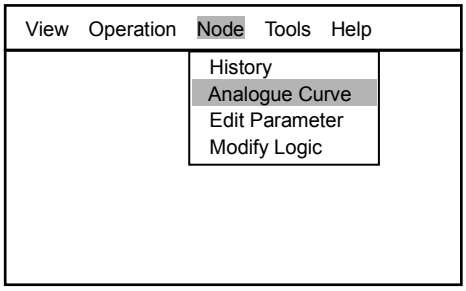


2. Choose “Browser View” and press “OK” key.
   The tree structure of the system is displayed, including stations, lines, points.

3. Press “↓” to choose one desired point and press key.



4. Press “→” to choose “Node” sub-menu.

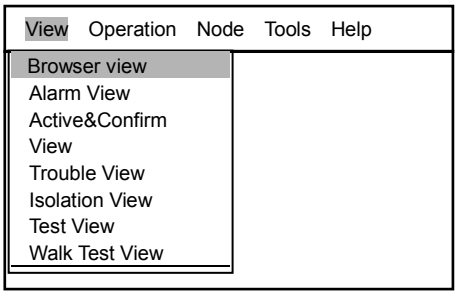


5. Press “↓” to choose “Analogue Curve” and press “OK” key.
   The analogue curve will be displayed.

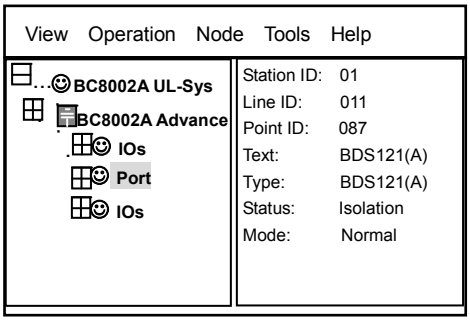
How to modify parameters

Function: Operator can modify editable parameters of station, line, point by control unit.

1. Press " " to active menu window.
   The options of "View" sub-menu is displayed.

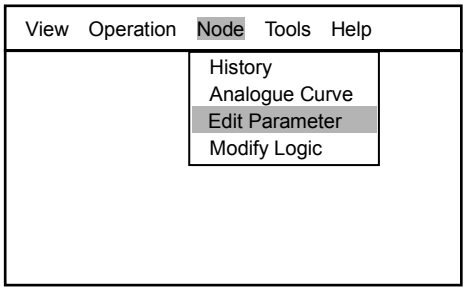


2. Choose "Browser View" and press "OK" key.
   The tree structure of the system is displayed, including stations, lines, points.

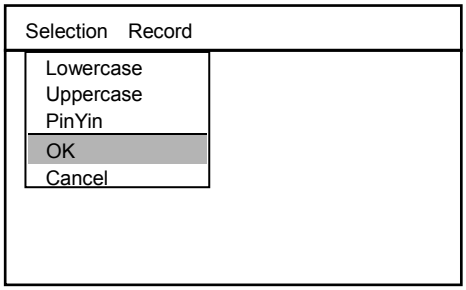


3. Press " ↓ " to choose one desired station/line/point and press key.

4. Press "→" to choose "Node" sub-menu.



5. Press " ↓ " to choose "Edit Parameter" and press "OK" key.
   All editable parameters are listed in the right window. Press " ↓ " to switch active window.

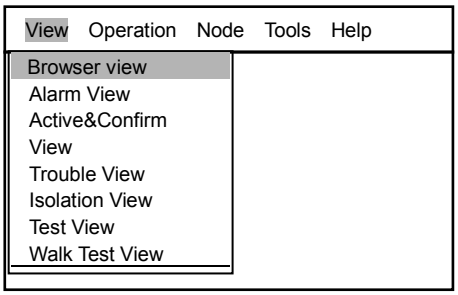


6. After finishing modification, press key and press " ↓ " to choose "OK" to save modification.

How to modify logic expression

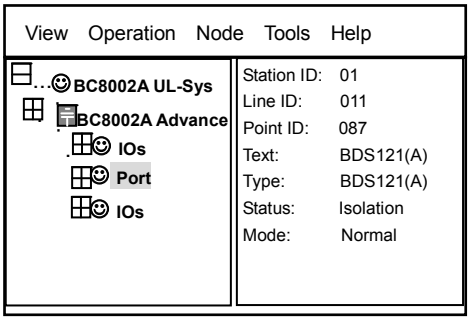
Function: Operator can modify logic expression of point by control unit. Operator can edit the logic expression of two or more devices to active the control module.

1. Press " ⏎ " to active menu window.
   The options of "View" sub-menu is displayed.



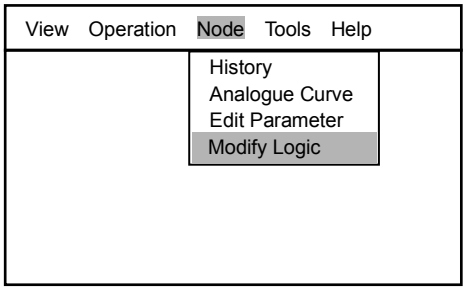
2. Choose "Browser View" and press "OK" key.
   The tree structure of the system is displayed, including stations, lines, points.

3. Press " ↓ " to choose one desired station/line/point and press ⏎ key.

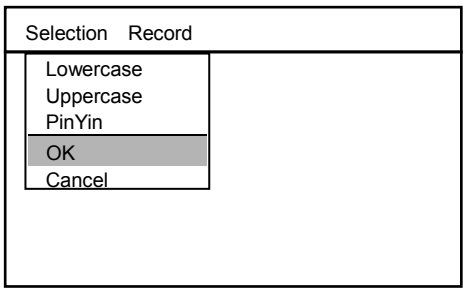


4. Press "→" to choose "Node" sub-menu.

5. Press " ↓ " to choose "Modify Logic" and press "OK" key.
   All editable parameters are listed in the right window. Refer to the below note on logic expression.



6. After finishing modification, press ⏎ key and press " ↓ " to choose "OK" to save modification.



Note:

1. Now the modified text is saved temporarily. If the control unit is reset, the modified text will be lost. If you want to save the modification for long time, please do the "Save Configuration" operation(refer to Page 44).
2. Explanation of logic expressions:

   - "+": "OR " relationship；For example: 01.011.001+01.011.002+01.011.003= 1.011.004, which means any of 01.011.001，01.011.002 and 01.011.003 issues alarm and links to the 01.011.004 equipment;

- “*”: “AND” relationship; For example: 01.011.001*01.011.002*01.011.003= 01.011.004， which means 01.011.001，01.011.002 and 01.011.003 concurrently issue alarms and link to the 01.011.004 equipment;
- “！”： “NOT” relationship; For example: ！（01.011.001*01.011.002）=01.011.004, which means 01.011.001 and 01.011.002 concurrently issues alarm but do not link to the 01.011.004 equipment;
- “（）”: Priority class. For example: （01.011.001+01.011.002）*01.011.003=01.011.004 , which means either 01.011.001 or 01.011.002 concurrently issues alarm along with 01.011.003 and links to 01.011.004;
- “+~+”，*~* : Both are valid abbreviations. It is not applicable to “[ ]N”; For example:

  01.011.001+~+01.011.015=01.011.016, which means that in the 1st line of No.1 Line Card in No.1 Controller, alarm (action) by any of No.1 to No.15 Equipment will link to No.16 Equipment;

  01.011.001*~*01.011.006=01.011.007, which means that in the 1st line of No.1 Line Card in No.1 Controller, concurrent alarm (action) by all field devices from No.1 to No.6 will link to the action of No.7 field device;

- “[ ]N”: Any N pieces of equipment issue alarms concurrently, ≤8 ；For example: [01.011.001，01.011.002，01.011.003]2=01.011.004, which means that alarm by any 2 of the 3 pieces of equipment will link to 01.011.004 Equipment. [01.011.001~01.011.003，01.011.005]2=01.011.004, which means that alarm by any 2 of No.1 to No.3 Equipment and No.5 Equipment will link to 01.011.004 Equipment.
- “；”：indicating the end of each complete interlocking logic expression;
- When a certain interlocking relation needs concurrent interlock to several pieces of equipment (output), “,” should be used to separate them; For example:（01.011.001+01.011.002）*01.011.003=01.011.004，01.011.005, which means that there is concurrent interlock to both 01.011.004 and 01.011.005, after the (01.011.001+01.011.002)*01.011.003 relation is met;
- “{T1,T2}”: T1, delay time; T2 duration of the interlocking command. For T1 and T2: 0-255 seconds are valid; For example: 01.011.001+01.011.002+01.011.003 =01.011.004{30，20}, which means after a delay of T1, the controller starts to issue a interlocking command, and after the interlocking command has lasted for T2, it stops issuing command.

Text Input Method:

1. Number input: press number keys on the keyboard to input numbers.
2. Letter input: press number keys of keyboard for a moment to input letters.

   For example, press number key “2”, screen display switch of characters among 2, a, b and c. When the desired character is displayed on the screen, release the key to finish input.

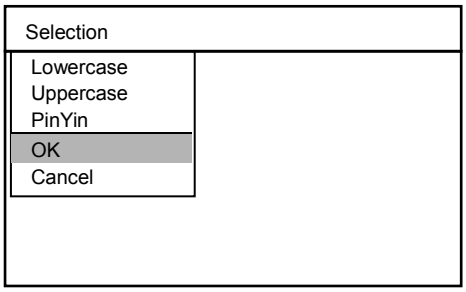


Fig.5-19 Selection

3. Lowercase and Uppercase switch: as shown in Fig. 5-19, select lowercase or uppercase → press (OK) key, then the letter input will change into lowercase or uppercase.
4. Special character input:
   - press number key “1”, ’1’, ’.’, ’+’, ’*’, ’=’, ’;’, ’~’, ’(’, ’)’, ’[’, ’]’, ’{’, ’}’, ’!’, ’:’, ‘space’, ’-’ will be displayed in cycle . When the desired character is displayed, release the key to finish input.
   - press number key “0”, '0', '<', '>' will be displayed in cycle . When the desired character is displayed, release the key to finish input.
5. Direction key “←” is used to delete.
6. The date format is “yyyy-mm-dd”., the time format is “hh:mm:ss”.

7. Press the up and down direction keys to switch over between editable windows.

8. After finishing edit, press (≡◄)key → press the direction keys to select “OK” → press (OK) key to save and return or to select “Cancel” → press (OK) key to cancel and return. (as shown in Fig.5-19)

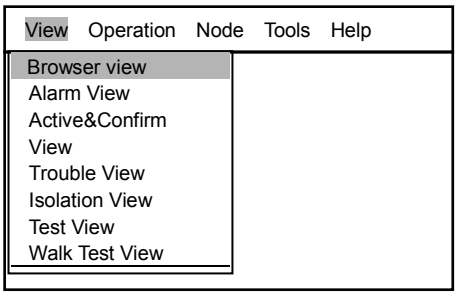
Note:

Under the text input status, edited contents can only be saved in the short term. After the system restarts or closed down, the contents will be lost. Therefore, it is recommended to save the contents in the long term. Method for long-term saving, please refer to “Save Config”.

13. Help

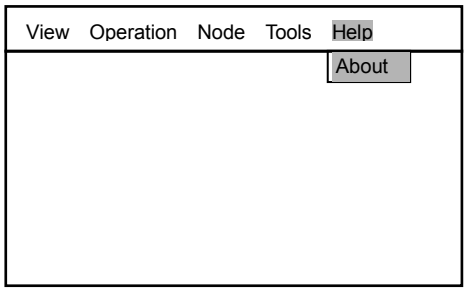
- **Function:** Display software version, download time and modification time.

1. Press "≡" to enter main menu.
   The main menu is displayed.



2. Press "→" to choose "Help" and press "OK" key into About.
   System software version, license number and last download time are displayed.

3. Press "C" to return to previons window.



Help Screen

Text Input Method:

1. Number input: press number keys on the keyboard to input numbers.
2. Letter input: press number keys of keyboard for a moment to input letters.

   For example, press number key “2”, screen display switch of characters among 2, a, b and c. When the desired character is displayed on the screen, release the key to finish input.
3. Lowercase and Uppercase switch: as shown in Fig. 5-19, select lowercase or uppercase → press (OK) key, then the letter input will change into lowercase or uppercase.

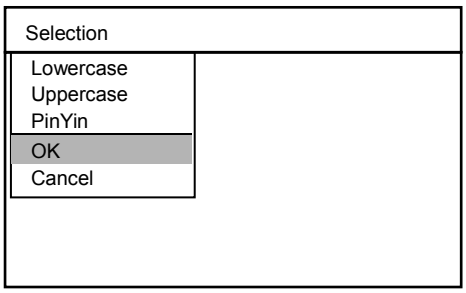


Fig.5-19 Selection

4. Special character input:
   - press number key “1”, ’1’, ’.’, ’+’, ’*’, ’=’, ’;’, ’~’, ’(’, ’)’, ’[’, ’]’, ’{’, ’}’, ’!’, ’:’, ‘space’, ’–’ will be displayed in cycle . When the desired character is displayed, release the key to finish input.
   - press number key “0”, '0', '<', '>' will be displayed in cycle . When the desired character is displayed, release the key to finish input.
5. Direction key “←” is used to delete.
6. The date format is “yyyy-mm-dd”., the time format is “hh:mm:ss”.
7. Press the up and down direction keys to switch over between editable windows.
8. After finishing edit, press (≡)key → press the direction keys to select “OK” → press (OK) key to save and return or to select “Cancel” → press (OK) key to cancel and return. (as shown in Fig.5-19)

Note:

Under the text input status, edited contents can only be saved in the short term. After the system restarts or closed down, the contents will be lost. Therefore, it is recommended to save the contents in the long term. Method for long-term saving, please refer to “Save Config”.

CHAPTER 4 MAINTENANCE

1. Daily Examining

Persons on duty should do daily check of control unit and make records. If fire alarm, troubles and other abnormal events happen, “Trouble-shooting Guideline” shall be followed. After the control unit restores to normal, the events shall be well recorded

2. Trouble-shooting Guideline

No.	Failure content	Possible reasons	Repairing methods
1	Function keys, LED and LCD screen are ineffective or damaged	Failure of signal wire or power line; Damage of corresponding hardware;	Correct connection; Replace corresponding hardware;
2	No indication of power supply	Main power or battery is off; Power connection is not firmly secured; Power supply is damaged;	Check the wiring of power supply and battery; Replace main board;
3	Power supply is on but the LCD on control unit is “black screen”	LCD brightness is not enough; LCD without power or the adapter on main board is damaged; LCD is damaged,	Adjust LCD brightness; Examine power supply line or replace main board; Replace LCD;
4	Control unit can not display any content.	System software or project files are lost; CPU board is damaged;	download corresponding software; Replace CPU board;
5	No sound	No voltage; Volume of buzzer is not enough; Buzzer is damaged;	Replace power supply line or main board; Adjust buzzer’s volume; Replace buzzer;
6	Control station fault	Project file is unconformable with the devices on site; Main board address is not set or unconformable with project file; Main board is damaged;	Modify project file; Modify address setting; Replace main board;
7	Main board input & output fault	Project file configuration is wrong; The input/output port of main board is damaged;	Modify the configuration; Replace main board;
8	Power supply fault	Project file is unconformable with practical project; Exterior voltage overrun power requirements; Battery is damaged; Power supply is damaged;	Modify project file; Adjust exterior voltage; Replace main board or battery;

No.	Failure content	Possible reasons	Repairing methods
9	Auto-interlocking fault	Interlocking relationship is not set correctly or interlocking relationship is not right; Control device is damaged; Power supply or control line fault;	Change configuration of project file; Replace damaged equipment; Examine wiring;
10	Manual control fault	Operating level is not high enough; Control unit is not in manual state; Control device is damaged; Power supply and control line failure;	Logging on higher level; Alter the working state of control unit; Replace damaged equipment; Examine wiring;
11	Failure of “isolate” and “open”	Operating level is not high enough; Operating method is not right; Operating panel is damaged; Main board is damaged;	Log on higher operating level; Replace operating panel; Replace main board;
12	Failure of “Test” and “Restore[Test mode]”	Operating level is not high enough; Operating method is not right; CPU board is damaged;	Log on higher operating level; Replace CPU board;
13	Display errors of “Fire-alarm”, “Activate” and “Fault ”etc.	Errors of project file; CPU board is damaged;	Update the project file; Replace CPU board;
14	Failure of inquiring history events	Operating level is not high enough; Operating method is not right; Main board is damaged;	Log on higher operating level; Replace main board;
15	Failure of site programming (modifying)	Operating level is not high enough; Operating method is not right; CPU board is damaged;	Log on higher operating level; Replace CPU board;
16	Other operating failure on control unit	Operating level is not high enough or operating method is not right, Project file is lost or fault; Some hardware is damaged;	Log on higher operating level; Update project file; Replacing damaged hardware;

3. Replaceable Elements

Name	Model	Replacement
Power supply fuse (Standby power supply)	10A	Replace the same model product
Power supply fuse(Main power supply)	5A	Replace the same model product
Connecting terminal	Phoenix	Replacing the same model product

For problems with other components, please contact manufacturer for replacement

4. Reclamation

For abandoned control units, please contact local office of manufacturer to make proper treatment. Any random discarding of control units is strictly forbidden.

Building Technologies

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