



User Manual

ADDRESSABLE FIRE ALARM CONTROL PANEL
BP-FD-ACP300-1L



Enjoy it.

CONTENTS

- 1. About This Manual..... 2
- 2. Introduction.....2
 - 2.1 Overview..... 2
 - 2.2 EN 54 information..... 2
 - 2.3 Key features..... 3
 - 2.4 An overview of panel’s access levels..... 3
- 3. Construction, Indications and Controls.....4
 - 3.1 Panel construction.....4
 - 3.2 LED indicators..... 4
 - 3.3 Button controls..... 5
 - 3.4 Zone indication and control panel..... 6
- 4. Panel Functional Conditions..... 6
 - 4.1 Normal condition..... 6
 - 4.2 Fire condition..... 7
 - 4.2.1 Fire condition with default output.....7
 - 4.2.2 Fire condition with output delays..... 8
 - 4.3 Fault condition..... 8
 - 4.3.1 System fault..... 8
 - 4.4 Disabled condition..... 9
 - 4.5 Test condition..... 9
- 5. User Operations..... 9
 - 5.1 Functions available at access level 1..... 10
 - 5.1.1 View current events..... 10
 - 5.1.2 Mute the panel..... 10
 - 5.1.3 Get entry to access level 2 or 3..... 10
 - 5.2 Functions available at access level 2..... 10
 - 5.2.1 Silence/resound sounders..... 11
 - 5.2.2 Evacuate control..... 11
 - 5.2.3 Reset the panel..... 11
 - 5.2.4 Change the panel’s time and date..... 11
 - 5.2.5 Change the password of access level 2..... 11
 - 5.2.6 View network configuration..... 12
 - 5.2.7 View fire indicating panel configuration..... 12
 - 5.2.8 Change the system name..... 12
 - 5.2.9 View the printer setup..... 12
 - 5.2.10 Change LCD brightness..... 13
 - 5.2.11 View bus setup..... 13
 - 5.2.12 View c&e setup..... 13
 - 5.2.13 Disable/test functions..... 14
 - 5.2.14 Event log functions..... 15

1. About This Manual

This manual contains all the information necessary for the end user to operate the BP-FD-ACP300-1L Fire Alarm Control Panel (FACP) with detailed functional descriptions for menu options. Other information about installation and commissioning are described in the separate Installation and Commissioning Manual.

2. Introduction

2.1 Overview

The purpose of the BP-FD-ACP300-1L FACP is to monitor input signals, give indications and possibly activate outputs as programmed. BP-FD-ACP300-1L is designed to comply with EN 54-2 with qualities of simple installation, operation and easy maintenance.

2.2 EN 54 information

In addition to the mandatory requirements of EN 54-2 the BP-FD-ACP300-1L shall offer the following EN 54 optional features with requirements.

Options:		EN 54-2 Clause
Indications	Fault signals from points	8.3
Controls	Delays to outputs	7.11
	Disablement of each address point	9.5
	Test condition	10
Outputs	Outputs to fire alarm devices	7.8
	Outputs to fire protection equipment (Output Type A)	7.10.1

The power supply of this panel shall comply with the following EN 54-4 requirements.

Power Supply Equipment Functions:	EN 54-4 Clause
Power supply from the main power source	5.1
Power supply from the standby power source (battery)	5.2
Charger	5.3
Faults	5.4

The FACP also support a few functions that are not covered by EN 54. These ancillary functions include the following:

- ✧ Integral printer
- ✧ Evacuate control
- ✧ Auxiliary fire alarm output and a 24V power output; a class change input
- ✧ Zone sounder control with the zone indication and control panel (ZCP)
- ✧ Networking function

Technically, the BP-FD-ACP300-1L connects a maximum of 324 detectors/manual call points per panel which is typically in non-compliance with the clause 13.7 specified in EN 54-2 (Operation of the c.i.e in the event of a system fault).

2.3 Key features

The BP-FD-ACP300-1L single loop 32 zone fire alarm control panel offers the following features:

- ✧ Up to 324 addresses on one loop
- ✧ An easy to read, 4.3" color screen LCD with a resolution of 480×272
- ✧ Zone indication and control panel (ZCP) for 32 zones gives a quick indication of the location of an alarm
- ✧ Record capacity of 1000 historical events for each of historical fire, historical fault and historical operation
- ✧ An independently programmable conventional sounder circuit output
- ✧ Integral power supply and battery
- ✧ Integral printer
- ✧ Flexible and intuitive cause and effect programming on front panel
- ✧ Zone test, point test and module start/stop testing facilitate the commissioning
- ✧ U-disk interface makes the load and save of configuration or historical data convenient for system commissioning and maintenance
- ✧ Hierarchy management with three access levels
- ✧ Anti-tamper protection by a key lock
- ✧ CAN bus for interconnection of up to 20 FACP's and RS-485 for connection with up to 30 fire indicating panels per FACP

2.4 An overview of panel's access levels

The BP-FD-ACP300-1L Fire Alarm Control Panel provides three levels of access.

Access Level 1 (general user):

The FACP is in access level 1 by default which is accessible to everyone. The followings can be achieved under this level:

- Toggle between tabs to view any fire, fault and disablement that are displayed
- Gain entry to access level 2 or 3
- Mute the panel's internal buzzer

Access Level 2 (authorized user):

This level is used by trained and authorized personnel. Access to this level is achieved by entering a valid four-digit password. Besides the above actions of access level 1, the followings are available as well:

- Disable or re-enable zones, sounders, terminal outputs and addressable points
- Reset the panel from fire or fault conditions
- Activate all sounders in the system for evacuation or silence them in one time
- Set zones into or out of a test mode
- View configuration of loop devices, zoning and C&E, event logs of the system
- Set the panel's time and date
- Rename the system
- Adjust the LCD brightness

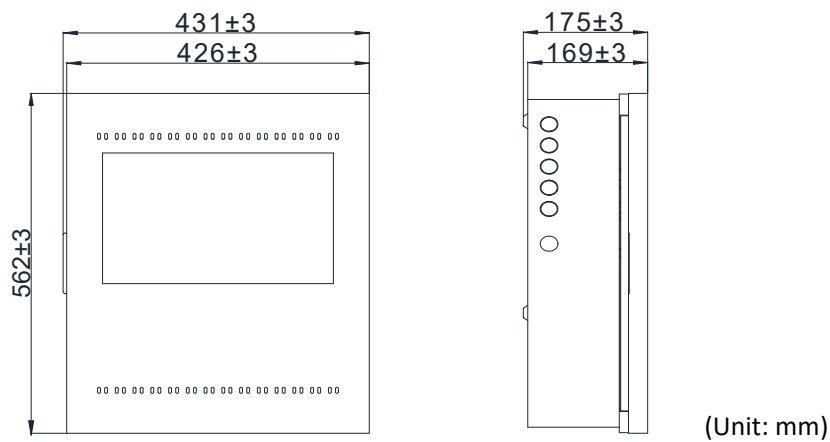
- Change the entry password to access level 2
- View or clear event and operating logs

Access Level 3 (authorized engineer):

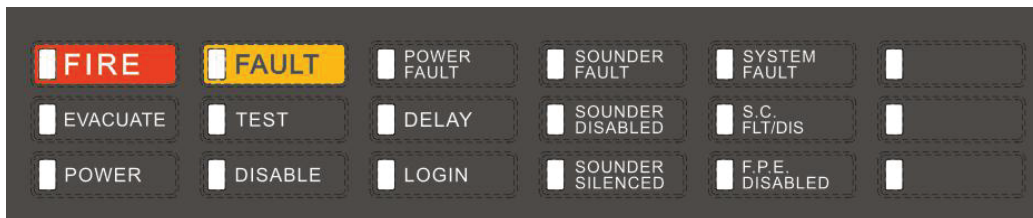
This level is the panel’s engineering/programming level. Access to this level is achieved by entering a valid six-digit password. All access level 1 and 2 controls, SYSTEM setup, BUS setup, C&E setup, ADVANCE and other functions relating to commissioning are available. More details of access level 3 can be found in the separate Installation and Commissioning Manual.

3. Construction, Indications and Controls

3.1 Panel construction



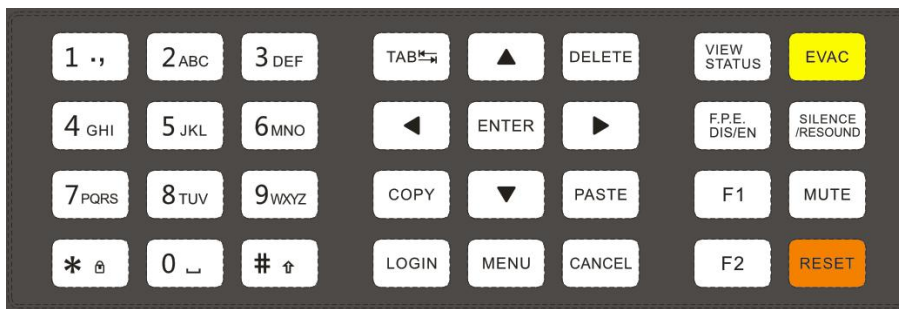
3.2 LED indicators



FIRE	Lit red when one or more devices are reporting a fire condition
EVACUATE	Lit red when the EVAC control button is pressed to activate all sounders of the system immediately
POWER	Lit green to show the panel’s mains power or battery is functioning
FAULT	Lit yellow when one or more faults on the system are detected
TEST	Lit yellow when the panel is under zone test state. This indicator does NOT light for any other test which is not specified by EN 54-2
DISABLE	Lit yellow when one or more loop devices, zones or outputs are disabled
POWER FAULT	Lit yellow when the panel’s mains power, battery or charger is in fault condition
DELAY	Steadily lit yellow when delay is configured as part of one or more cause and effect rules. Flashes when there is a delay running

LOGIN	Lit yellow when the panel is in access level 2 or 3
SOUNDER FAULT	Lit yellow when there is loop sounder in fault condition
SOUNDER DISABLED	Lit yellow when loop sounders are disabled
SOUNDER SILENCED	Lit yellow when all sounders of the system have been silenced by pressing the SILENCE/RESOUND button
SYSTEM FAULT	Lit yellow when the panel is unable to provide mandatory functions
S.C. FLT/DIS	Lit yellow when the sounder circuit output (S.C.Out) is disabled and flashes when it has a fault. Disable has priority over fault
F.P.E. DISABLED	Lit yellow to indicate the F.P.E. Out is disabled

3.3 Button controls



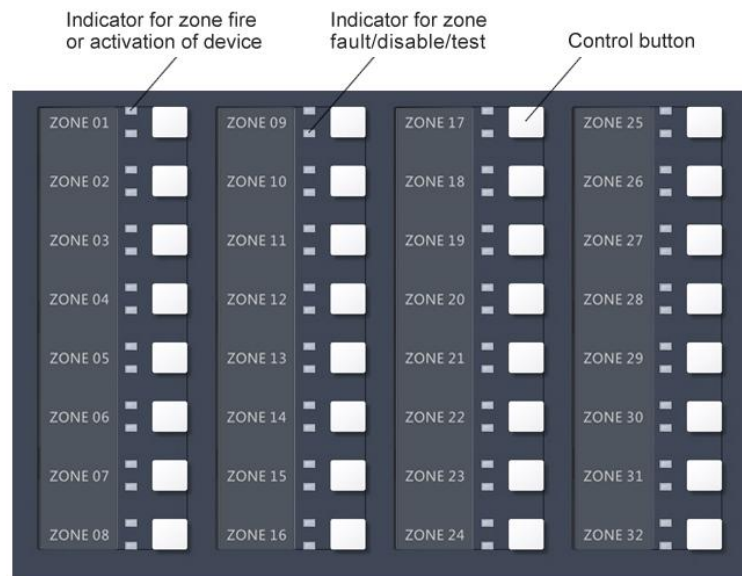
0~9, *, #	Used to enter numbers, letters and marks in a text box. Plus, * button provides access to LOGIN and LOGOUT windows at non-text-input state
TAB	Pressed to make the cursor move, or toggle between different items or windows from left to right, up to down
◀ ▼ ▲ ▶	For toggling, scrolling, or moving the input cursor
DELETE	Deletes the character left to the cursor
ENTER	Confirms a text input or a manual operation
COPY	Copies the content of text selected currently
PASTE	Pastes the content of text copied to current text box
LOGIN	Provides access to the prompt window for user's login or logout
MENU	Provides access to the panel's user menus at access level 2&3
CANCEL	Used to cancel a navigation step or exit the current menu
VIEW STATUS	Displays the window of current alarm message (as appropriate). Then press TAB, ◀ or ▶ to go through fire, disablement or fault messages.
EVAC	Gives an evacuation warning by activating all sounders of the system at access level 2&3
F.P.E. DIS/EN	Disables or re-enables the F.P.E. Out at access level 2&3
SILENCE/RESOUND	Silences the system's sounders at access level 2&3. Press again to resound the sounders previously silenced

MUTE	Silences the panel's internal buzzer
RESET	Returns the panel to its normal condition by clearing all fire and fault status indications at access level 2&3
F1, F2	Reserved buttons

3.4 Zone indication and control panel

The panel offers 32 control buttons with a pair of indicator LEDs beside each button. After registering with default settings, the upper LED of a pair lights when a zone goes into fire. The lower LED indicates fault or disablement/test status of that zone (it flashes when there is any fault with the zone, it lights steadily when the zone is in disablement or test condition). The control button then is used to activate sounders in that zone.

Note: Each unit of LEDs with a button corresponds to a zone by default settings. Besides, it can be defined to control a field device and give indication by configuring at Access Level 3 (refer to Installation and Commissioning Manual about the ZCP setup). In this case, the button is to start or stop the device and the upper LED lit to indicate a start command. It is strongly suggested that a label with a zone number or device name be stuck at the left of LEDs as a clarification of that unit.

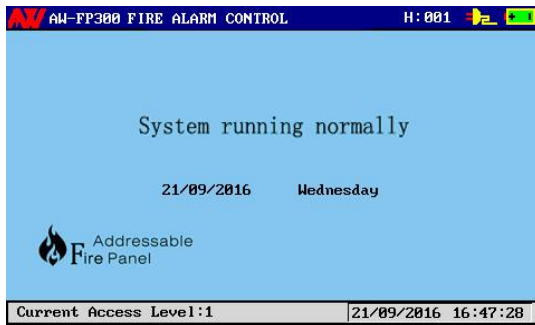


4. Panel Functional Conditions

This section describes how the panel's functional conditions are indicated, how the panel responds, or how users should respond. For LCD display, priority is always given to the most important current event, i.e. fire conditions will override fault and/or disabled conditions.

4.1 Normal condition

Under normal condition (when no fires or faults are occurring) the POWER LED is lit meaning the mains voltage is present on the system. If one or more delays have been programmed and registered the DELAY LED will be lit. The display will show as below:



The color LCD will display the panel's model, the current access level, time, date, status, host number, etc.

4.2 Fire condition

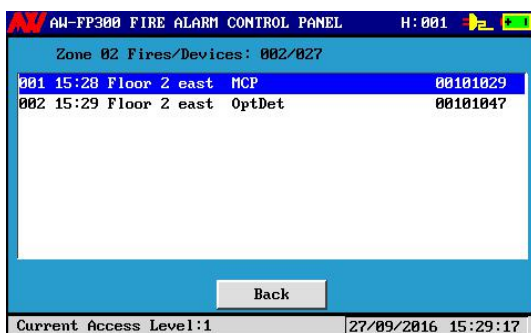
If fire is detected by fire detector, or confirmed by a manual call point the panel enters a fire condition and responds as follows:

- The FIRE and corresponding indicator on the ZCP are lit (if applicable);
- The panel's internal buzzer sounds;
- The information about zones in alarm are reported on the LCD where the first zone in alarm will be always kept on the top of the list. Also, the total number of zones in alarm is given. See an example of a typical LCD fire display below;
- The zonal sounders, s.c. output, f.p.e. output and f.a. output operate as programmed;
- The event is printed if a printer is applicable.



The LCD displays the FIRE state screen and shows all zones where the fire is detected together with their location description.

Scroll through the zones using the ▲ and ▼ buttons. Press ENTER or double-click at each target zone will give you details about all actual fire alarm points on that zone.



There are two fire signals from zone 2 with 27 points. One is from a manual call point, the other from an optical smoke detector.

Note: In the event of a fire condition, the building's fire management plan should always be executed. Authorized users can silence or reset the system as appropriate by entering access level 2 and pressing the buttons on the panel's front. Refer to Part 5.2 for more information.

4.2.1 Fire condition with default output

A default output of sounders and terminals is designed for the sake of c&e setting brevity.

That is, when a fire condition occurs in a zone, the associated zonal sounders, F.A.Out, F.P.E.Out and S.C.Out (if applicable) will be activated by default. Moreover, the default output to the zonal sounders can be delayed which you could check under the C&E menu option.

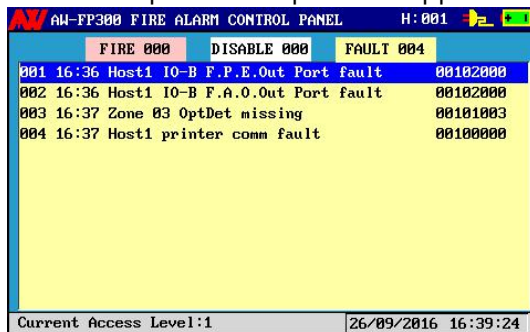
4.2.2 Fire condition with output delays

If a fire condition occurs complying with a cause and effect that has been programmed with one or more output delays, the panel reports the fire condition as described above and the DELAY indicator flashes to indicate that one or more assigned outputs has not yet triggered. During the delays, by triggering a manual call point the delays can be overridden and delayed outputs be activated immediately.

4.3 Fault condition

When panel enters a fault condition it responds as follows:

- The FAULT LED on and corresponding indicator on the ZCP pulses (if applicable). If the fault is with power, sounders or sounder circuit the POWER FAULT, SOUNDER FAULT or S.C. FLT/DIS indicators will also pulse;
- The panel’s internal buzzer sounds;
- The LCD displays details regarding the fault. See an example of a typical fault display below;
- The Fault Output relay switches;
- The event is printed if a printer is applicable.



The LCD displays the FAULT status screen and shows detailed fault message.

For a fault from a specific point, the actual device and its location description will be shown. For other faults, information regarding the fault will be displayed instead. The list below shows the description of some fault types for your information.

Missing	Open	Short
Duplicate address	Type mismatch	Sensor fault
Sensor contaminated	Loop short	Loop open
Power fault	Port fault	Host network comm fault
FIP comm fault	Printer comm fault	System fault

Note: In the event of a fault condition, the responsible personnel on site should check and handle the problem in time to ensure the fault is rectified. For each fault message, it is followed by an ID code which is for the benefit of service engineers, etc.

4.3.1 System fault

Particularly, if a system fault, such as a processor fault, occurs the panel reports system fault and fails to work normally.

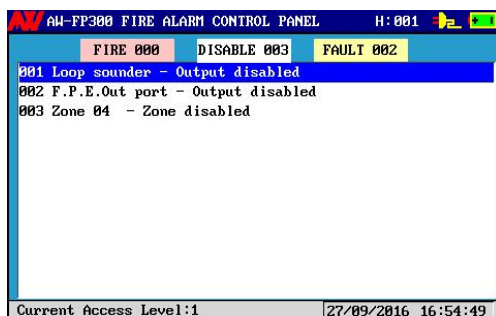
- The FAULT and SYSTEM FAULT indicators on ;
- The panel's internal buzzer sounds;
- The panel cannot supervise any fire alarm;
- LCD displays system fault with a reference ID code for the benefit of service engineer, except the fault caused by the breakdown of the CPU, the LCD will have no display and restarting the panel is needed after the fault is removed;
- Even when the fault is removed, the indications can only be cleared and make the panel back to operation by resetting the panel under access level 2 or 3.

In this case, the user should call the service engineer immediately.

4.4 Disabled condition

When a loop device, an output or a zone is disabled the panel enters a disabled condition and responds as follows:

- The DISABLE LED on and if a zone has been disabled the corresponding indicator on the ZCP lights steadily as well (if applicable);
- The disablement details can be interrogated at access level 1. See an example of a typical disablement display below.
- All associated programmed outputs or mandatory indications will no longer operate or effect panel's condition.



4.5 Test condition

When one or more of the fire alarm system's zones have been programmed into test mode at access level 2 or 3 the panel enters a test condition.

- The TEST LED on and corresponding indicator on the ZCP lights steadily (if applicable);
- Any fire alarm raised on the zone under test will not be reported as fire to the panel;
- Any fault occurs on the zone under test will still be reported;
- When a zone is in test mode, any detector/manual call point triggered on that zone will activate the associated zonal sounders for a brief period (about 2s) and then stop.

Note: There are other test methods for commissioning which can be carried out at access level 3, such as point test, module start/stop test and duplicate address check. But they are not regarded as a test condition specified by EN 54-2. Thus only under the zone test mode that the TEST indicator will light.

5. User Operations

This section focuses on functions available at access level 1 and 2. Details of configuring and other various functions at access level 3 are covered in the separate Installation and

Commissioning Manual.

5.1 Functions available at access level 1

Access level 1 is accessible to everyone. The followings can be achieved under this level:

- View any current fire, fault and disablement
- Mute the panel's internal buzzer
- Gain entry to access level 2 or 3

These operations available at access level 1 are explained in detail below.

5.1.1 View current events

This function is only available if there are active fire, fault or disablement conditions on the system. If so, the display will automatically skip from the window of the normal condition to the main alarm window as figure shown above in page 8.

It contains three windows with their own tag regarding fire, disablement and fault events accordingly. Press TAB or ◀, ▶ to switch between the windows. Then press the ▼ and ▲ buttons to scroll through all active events under each window. These operations can be done with a mouse as well.

In particular, more information can be viewed about a zone in alarm by pressing ENTER or double click the target zone with left button of the mouse connected. To return to the main alarm window press the CANCEL button.

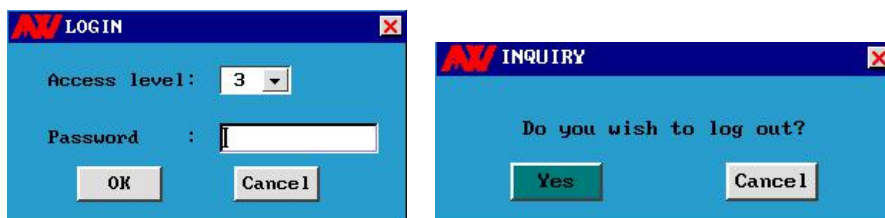
Note: Since fire alarm has the highest priority. Thus if you are viewing at other windows under a fire condition, the screen will automatically skip back to the fire state window within a short period of time (about 25s) following the last operation.

5.1.2 Mute the panel

In the event of fire and fault condition, the panel's internal buzzer will sound. The MUTE button is available for everyone to silence the buzzer and go on to handle the specific alarm condition. Note that any new fire or fault event will restart the buzzer.

5.1.3 Get entry to access level 2 or 3

Press the LOGIN or the star button, or Ctrl+Alt+Delete on a USB keypad, the LOGIN dialog box appears. To log out, repeat the operation.



Authorized user can choose an access level of 2 or 3 and input the corresponding password. The default passwords to access level 2 and 3 are 2222 and 333333 accordingly. If these do not work, they may have been changed by an authorized user. As soon as the password has been correctly entered additional panel controls and menu options will be available.

5.2 Functions available at access level 2

This level is used by trained and authorized personnel only. Besides all functions of access

level 1, the panel's EVAC, SILENCE/RESOUND, RESET and F.P.E. DIS/EN function buttons become active. The MENU button can now provide entry to menu options window so that the followings can be achieved at access level 2:

- Disable or re-enable zones, sounders, terminal outputs and addressable points
- Set zones into or out of a test mode and view any zones that are being tested
- View configuration of the system including loop devices, C&E, networking and etc
- Set the panel's time and date
- Rename the system
- Adjust the LCD brightness
- Change the entry password to access level 2
- View or clear event and operating logs

Details of all functions available at access level 2 are explained below.

5.2.1 Silence/resound sounders

To silence any active sounders, enter access level 2 and press the SILENCE/RESOUND button. The alarming sounders will stop and the SOUNDER SILENCED indicator will light steadily. At this time, press the button again will resound them.

5.2.2 Evacuate control

Pressing the EVAC button on the front panel will start all of the sounders on the system to give an evacuation signal to the protected area. The EVACUATION indicator will light.

5.2.3 Reset the panel

After appropriate actions having been taken to investigate and remedy the cause of fire or fault events, the RESET button could be pressed to clear all fire and fault status indications on the panel and return it to normal condition. If any conditions still exist in the system, the panel will once again display and indicate such events until they have been remedied.

5.2.4 Change the panel's time and date

Select the 'Set time/date' under the SYSTEM menu option. This function allows the panel's time and date to be adjusted. When selected a window for adjustment will appear:

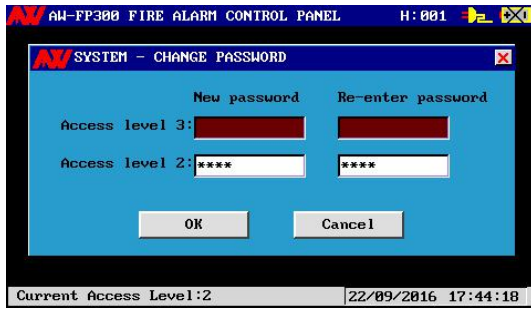


When the correct time and data are set, the time showed at the bottom of the screen will be changed synchronously.

When the correct time and data are set, the time showed at the bottom of the screen will be changed synchronously.

5.2.5 Change the password of access level 2

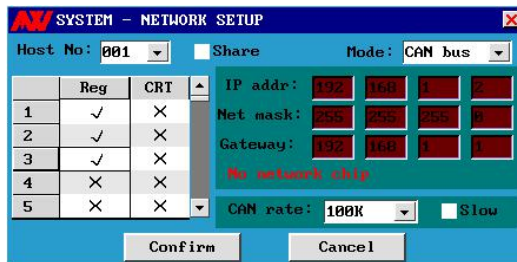
Select the 'Change password' under the SYSTEM menu option. This function allows the password of access level 2 to be changed and a four-digit password is required.



For password of level 3, it can only be changed at level 3 and a 6-digit one is required.

5.2.6 View network configuration

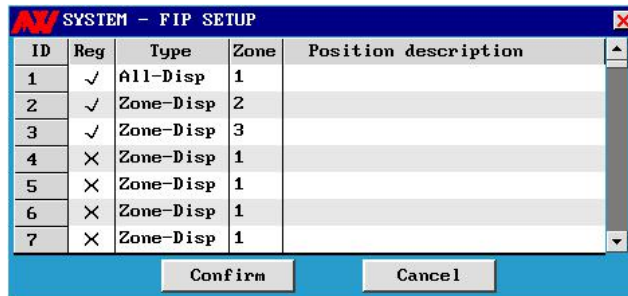
Select the 'Network setup' under the SYSTEM menu option. The finished setup window will present the current network configuration of the system. For more information about how to set the transmission mode, refer to the separate Installation and Commissioning Manual.



The picture left shows that there are three panels registered and/or included in a network by CAN bus.

5.2.7 View fire indicating panel configuration

Select the 'FIP setup' under the SYSTEM menu option. Through the window you can read about how many or if any fire indicating panel is included in the system. Refer to the Installation and Commissioning Manual for information about the configuration process.



5.2.8 Change the system name

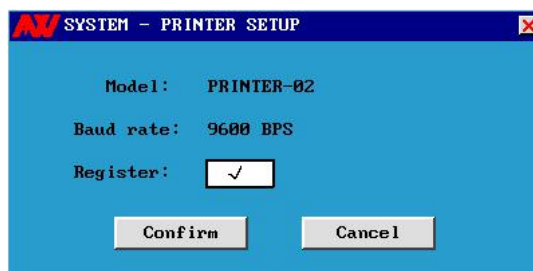
Select the 'Rename system' under the SYSTEM menu option to get entry to the window below.



The system name entered will be shown on the left top of the screen.

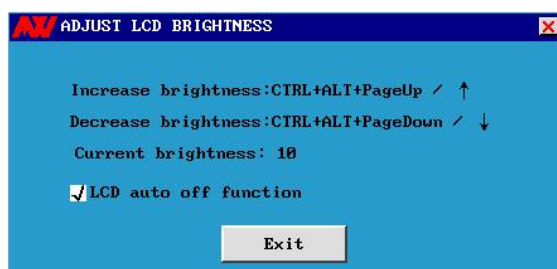
5.2.9 View the printer setup

Select the 'Printer setup' under the SYSTEM menu option to check if the standard printer of model PRINTER-02 is registered.



5.2.10 Change LCD brightness

Select the 'LCD brightness' under the SYSTEM menu option. This function allows the display screen's brightness to be adjusted from level 1 to level 10 (the brightest level).

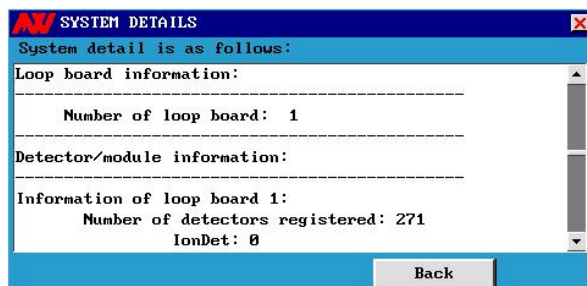


An auto-off function of the display is optional which will turn off the display when left unused after 5min at normal state. Click to select or cancel it.

5.2.11 View bus setup

The configuration about zones and devices can be viewed by entering the corresponding menu options under the category named BUS, which however does not allowed to be edited at the access level 2.

Moreover, refer to the 'System details' option for a more general statistics about the system including its fire zone, network panel/FIP, loop board, devices, current faults, printer, etc.



Scroll through by the ▲ and ▼ buttons for general view.

Note: The configuration function is only available to access level 3. Refer to the section 5.2 of the Installation and Commissioning Manual to get known about the configuring process.

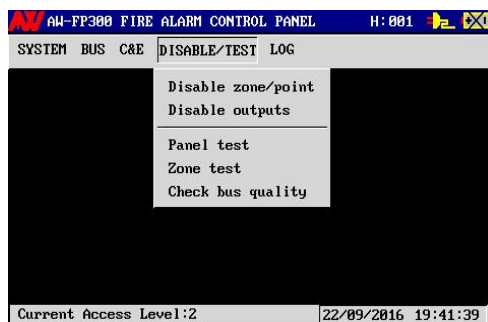
5.2.12 View c&e setup

The cause and effect information of the system can be read about through the menu category named C&E including default c&e, general c&e, zonal c&e, specific c&e and ZCP setup. For its definition and the the programming part, they are detailed in the separate Installation and Commissioning Manual.

Note: The general c&e, zonal c&e or specific c&e setup function is designed to be an addition to the default output of F.A.Out, S.C.Out, F.P.E.Out (if applicable) and zonal sounders activated by a fire condition.

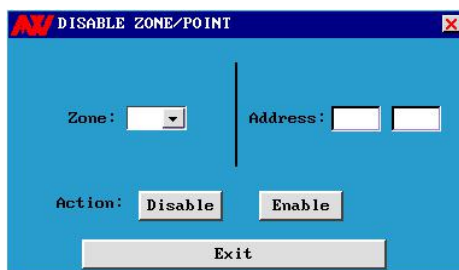
5.2.13 Disable/test functions

Clicking by the USB mouse or pressing ► to select the DISABLE/TEST menu option will show you the sub-menu which allows you to enable or disable zones, points, sounders and other outputs, and to perform some tests.



Disable zone/point

This function allow zones or points to be disabled/re-enabled from reporting fires, faults, etc. When selected, a window appears as below.

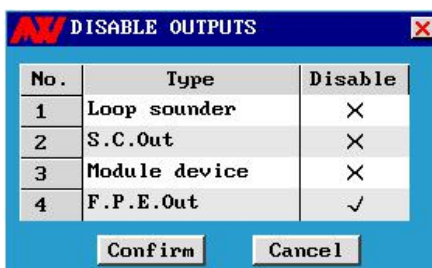


Select the zone to be disabled/enabled or enter the point address of the objective loop device. Then press the Disable or Enable option to set.

Once a zone is disabled (each point in that zone is disabled), the LCD will indicate a disablement of the zone and the zone’s status LED on the ZCP will light accordingly.

Disable outputs

This function allows the disablement of the loop sounders, the S.C.Out, the F.P.E.Out and the field devices connected with output modules from activating as programmed. Switch each output’s status between disabled and enabled, the corresponding indications will be given.



When the F.P.E.Out is set disabled as the picture left shows, the DISABLE and the F.P.E DISABLED indicators will light after confirmation.

Note: the loop sounders can only be disabled/enabled as a whole rather than individually.

Panel test

This function allows the panel’s display, LEDs and internal buzzer to be tested to ensure that if they are working correctly.

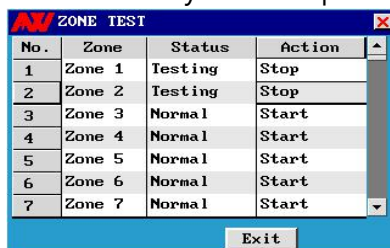
When the ‘Panel test’ option is selected, all of the panel’s LED indicators will light steady and the display will progressively block fill. The panel’s internal buzzer will sound. The whole process will last about 30s with alarm function suspended.

Upon completion, the panel will return to the exact state right before test. If any of the

indicators fail to function well, report it to the designated site engineer or manufacturer.

Zone test

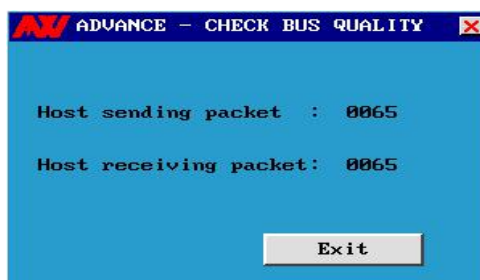
This function allows you to set one or more of the system’s detection zones into test. When a zone is in testing mode, any detector/manual call point activated on that zone will only trigger the sounders that are mapped to that zone for a brief period (about 2s). And no fire is reported to the FACP or any other output circuit be activated.



Press 'Start' will put the corresponding zone into testing state, then the text turns into 'Stop'. Press again to bring the zone back to normal state.

Check bus quality

This function monitors the CAN bus networking condition between panels. The number of host receiving packets and the bus communication are closely related with each other. When in a fault condition, the numbers of the host sending packets and receiving packets will differ a lot. Normally, they are similar:



5.2.14 Event log functions

This function allows you to view, clear or print the panel’s event or operation log. Click the LOG menu option to show the specific sub-menus:



View fire/fault/operation log

When selected, a window will show a list of 1000 events in chronological order accordingly for each item. Print function is available when a printer is fitted and registered correctly. The picture below has given an example on the fire log.

No.	Time	Contents
1	28/09/16 18:58	Zone 03 (001/028)
2	28/09/16 18:57	Zone 02 (001/027)
3		
4		
5		
6		

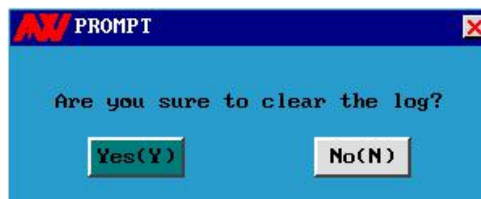
From 1 to 1

Current Access Level:2 28/09/2016 18:59:55

Each event is individually time and date stamped.

Clear fire/fault/operation log

When 'Clear fire log'/'Clear fault log'/'Clear operations' is selected, the fire/fault/operation log will be cleared from the panel's memory. To help ensure it is not selected by mistake, a prompt will appear.



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