Conventional fire alarm panel

User Manual

Introduction:

1. AW-CFP2166 series conventional fire alarm panel is designed based on EN54 part 2&4 standard.
2. It is modularized design, the panel can expend from 1 zone to 32 zones easily.
3. It has 2 level control mode by a lock
4. It has 27VDC power supply output.
5. It has FIRE PROTECTION, FIRE ROUTING and FAULT signal output, the output can be configured to dry relay type or wet sources type.
6. It has 2 channel general sounders output.
7. Each zone has 1 circuit detectors input .
8. Each zone can be disable by a button.
9. It has RESET button to reset the panel.
10. It has SILENCE button to stop BUZZER and SOUNDERS.
11. It has EVACUATE button to start a manual fire alarm immediately.
12. It has TEST button to test all LEDs orderly.
13. It has battery low protection function, when battery voltage lower than 21VDC, battery will be cut off automatically until the mains power is on.
14. It has an optional GSM module for fire alarm by SMS .
15. It is economic, user-friendly and easy maintenance.

Parameters:

ITEM	**1Zone panel**	**2Zone panel**	**4-8Zone panel**	**4-32 Zone panel**
Model No.	AW-CFP2166-01	AW-CFP2166-02	AW-CFP2166-04 -16	AW-CFP2166-04-32
Power specification				
Mains supply voltage	110VAC or 240VAC			
Internal power supply	27.2VDC			
Total output current limited	500mA @ 240VAC	500mA @ 240VAC	3A @ 240VAC	3A @ 240VAC
Main supply monitor for fault	Yes			
Battery protection for low voltage	Yes			
Batteries (default configuration)	12V2AH*2			
Detector circuit specification				
Number of circuit	1	2	4-16	4-32
Line fault monitor for open circuit	Yes			
Line fault monitor for short circuit	Yes			
Line fault monitor for detector	Yes, if End of Line Monitor Unit fitted in place of End of Line Resistor			

removal				
End of Line device	6.8k Ω,5% tolerance, 0.25W (colour code-blue,grey,red,gold)			
Detector continuity diodes	Silicon 1N4001 or Schottky type (required if End of Line Monitor Unit fitted to give Detector Removal Fault)			
Call point resistor value	470 to 680 Ω, 0.225 or 0.5 watt			
Maximum number of smoke/heat detectors per zone	20 (based on a total detector current of 2mA, each detector consuming 100 μA).Note: if End of Line Monitor Unit is fitted, for correct operation maxmum voltage drop must not exceed 12 volts.			
Maximum number of manual call points per zone	No limit			
Sounder circuit specification				
Number of general circuits	2			
End of line resistor value	6.8k Ω,5% tolerance, 0.25W (colour code-blue,grey,red,gold)			
Line fault monitor for open circuit	Yes			
Line fault monitor for short circuit	Yes			
Outputs fused AT	400mA			
Maximum number of bells @ 20mA of each sounder output	20			
Fuses				
27VDC fuse	3A F 20mm			
Fire and fault output				
Output type	Dry relay output :NC and NO relay; wet source output			
Maximum current	100mA			
Connection block				
Largest acceptable conductor size	$2.5mm^2$			
Smallest acceptable conductor size	$0.75mm^2$			
Size and weight				
Dimensions(mm)	272*200*70mm	320*231*90mm	395X502X124	362X565X124
Weight (without batteries)	4kg	5kg	7kg	8kg
Weight (with batteries)	5.8kg	6.8kg	9.6kg	12.5kg

User guide:

1 LED indicators:

1.1 General indicators:

1.1.1 **Power**: this LED on shows the main power 240VAC or 110VAC is on or backup battery is connected.

1.1.2 **Mains Fault**: this LED on shows the main power 240VAC or 110VAC is off.

1.1.3 **Battery Fault**: this LED on shows the battery is fault or connection is broke.

1.1.4 **Fire**: this LED on shows there is at least one detector or one manual call point (break glass) is under fire status.

1.1.5 **General Fault**: this LED on shows there are one or more faults in the internal

panel or the input / output circuit of the panel.

1.1.6 **Earth Fault**: this LED on shows there is an earth fault, some circuit is touching the iron shell or earth.

1.1.7 **Fuse Fault**: this LED on shows there is a fuse fault of the 27VDC power supply, the fuse is on the power board with label: F1 Main Fuse.

1.1.8 **MCU**: this LED flash shows the MCU in the panel work normally.

1.1.9 **System fault**: this LED on shows the panel internal is fault, most time is indicated the communication from the main board to each zones board is fault.

1.1.10 **Sounder , Fire Protection, Fire Routing, Fault:**

1.1.10.1 **Active**: this LED on shows the output is active.

1.1.10.2 **Short**: this LED on shows the circuit is short, for Fire Protection ,Fire Routing, Fault circuits, only the corresponding pin of the switch J12 on the I/O board is at the ON position, the wet source function is available..

1.1.10.3 **Open**: this LED on shows the circuit is open, for Fire Protection ,Fire Routing, Fault circuits, only the corresponding pin of the switch J12 on the I/O board is at the ON position, the wet source function is available.

1.1.10.4 **Disable**: this LED on shows the circuit is disable, when there is a fire alarm or a fault alarm, but the corresponding circuit dose not have output.

1.1.11 **Reset**: when the Reset button is under pressing, this LED will be on, and all current Fire or Fault alarm will be clear , and all the zones will be power off and then power on.

1.1.12 **Silence**: when the Silence button is under pressing, this LED will be on. The silence button can stop the Buzzer and Sounder output for the current alarm.

1.1.13 **Evacuate**: when the Evacuate button is under pressing, this LED will be on. This button can make the manual Fire alarm and let the Buzzer, Sounder, Fire Protection, Fire routing be active if they are not disable.

1.1.14 **Test**: when press this button the Test LED will be on, and all front boards LED will be on and off orderly.

1.2 **Zone indicators**:

1.2.1 **Short**: it shows the detector circuit is short.

1.2.2 **Open**: it shows the detector circuit is open.

1.2.3 **Fire**: it shows there is at least one detector or one manual call point (break glass) is under fire status.

1.2.4 **Disable**: it shows this zone is disable by the zone enable/disable button.

1.3 For one zone panel only:

1.3.1 **Mains on**: this LED on shows the main power 240VAC or 110VAC is on.

1.3.2 **Batter/Power Supply Fault**: this LED on shows the main power or the battery power is fault or off.

1.3.3 **Sounder Fault**: this LED on shows the sounder output circuit is short or open.

1.3.4 **Zone Fire**: this LED on shows there is at least one detector or one manual call point (break glass) is under fire status.

1.3.5 **Zone Fault**: this LED on shows the detector circuit is short or open.

2 Key control

2.1 **Enable**: when the key turn to Enable, the buttons are available for pressing.

2.2 **Disable**: when the key turn to Disable, the buttons are not available for pressing.

3 Buttons

3.1 **Reset**: when the Reset button is under pressing, this LED will be on, and all current Fire or Fault alarm will be clear , and all the zones will be power off and then power on.

3.2 **Silence**: when the Silence button is under pressing, this LED will be on. The silence button can stop the Buzzer and Sounder output for the current alarm.

3.3 **Evacuate**: when the Evacuate button is under pressing, this LED will be on. This button can make the manual Fire alarm and let the Buzzer, Sounder, Fire Protection, Fire routing be active if they are not disable.

3.4 **Test**: when press this button the Test LED will be on, and all front boards LED will be on and off orderly.

3.5 **Battery Reset** : this button is inside the panel, when the main power and battery power are all off, if the battery unit voltage is over 21VDC, press this button can restore the battery power supply.

3.6 **Disable**: Sounder , Fire Protection, Fire Routing, Fault and Zone Disable buttons, when the Disable button is pressed, the Disable /Enable LED will be on /off, it shows the corresponding circuit is disable / enable. **Note: for reliable, the Disable button must be pressed again after 5 seconds.**

4 **Switch:**

4.1 **Mains power switch:** it is for switch on/off the mains power supply.

4.2 **Battery switch: i**t is for switch on/off the battery power supply.

5 **Power on self-test: when power on, within 5 minutes, the panel system will test itself, if in the first 5 minutes, some zone has fire or fault alarm, the panel system will reset the corresponding zone several times until the fire or fault alarm disappeared.**

6 **DIP switch:**

6.1 **Main board DIP switch J5:** it is for indicating the total number of the zones boards. For example: if there are 2 pcs zones boards in the panel, so the J5 is 2. If there are 5 pcs zones boards in the panel, so the J5 is 5. If the main board J5 number is not according to the total zones boards, or some zones boards is lost or wrong number, for example, the main board J5 number is 2, but there is only one zones board and the J4 number is 1, then after 30 seconds, the panel will make a System Fault.

6.2 **Zones board DIP switch J4:** it is for indicating the zones board No. in the panel. For example: if the zones board is No.1 (for Zone 1 to 4), so the J4 is 1. If the zones board is No.2 (for Zone 5 to 8), so the J4 is 2. The last zones board J4 number is equal to the main board J5 number.

6.3 **Number: the number is binary. When the pin position is at "ON" , it is 1, when the pin position is at "OFF" (or not "ON"), it is 0. From left to right can read out the number.The decimal-binary table is below:**

Decimal	Binary
1	0001
2	0010
3	0011
4	0100

5	0101
6	0110
7	0111
8	1000

7 Installation

7.1 Wall mounted installation: open the panel , use M8 expansion bolt fix the panel on the wall via the installation holes on the back.

7.2 Connect the battery unit to the board. Note: the 2 batteries should be serial connected, the end voltage is about 24VDC.

7.3 Connect the main power supply.

8 Terminals

8.1 **+24V, GND**: the two terminals supply 22V-27.2VDC/25mA.

8.2 **Fire Protection:** this output is for control the fire protection devices, there are 3 terminals with 2 functions: dry relay and wet source:

8.2.1 **(C-P-O)**: the 3 terminals work as normally open and normally close dry relay output when fire alarm comes. C-P: Normal Close, O-P: Normal Open. This function is available when J12 pin 1 is on the OFF position.

8.2.2 + -: the 2 terminals work as wet source output, when fire alarm comes and the circuit is Enable , the ouput is 100mA@24-27VDC. This function is available when J12 pin 1 is on the ON position. There must be a 6.8K Ohm resistor at the end of the circuit (EOL).

8.3 **Fire Routing:** this output is for supplying output to fire routing devices, there are 3 terminals with 2 functions: dry relay and wet source:

8.3.1 **(C-P-O)**: the 3 terminals work as normally open and normally close dry relay output when fire alarm comes. C-P: Normal Close, O-P: Normal Open. This function is available when J12 pin 2 is on the OFF position.

8.3.2 + -: the 2 terminals work as wet source output, when fire alarm comes and the circuit is Enable , the ouput is 100mA@24-27VDC. This function is available when J12 pin 2 is on the ON position. There must be a 6.8K Ohm resistor at the end of the circuit (EOL).

8.4 **Fault:** this output is for supplying output for fault signal, there are 3 terminals with 2 functions: dry relay and wet source:

8.4.1 **(C-P-O)**: the 3 terminals work as normally open and normally close dry relay output when fault alarm comes. C-P: Normal Close, O-P: Normal Open. This function is available when J12 pin 3 is on the OFF position.

8.4.2 + -: the 2 terminals work as wet source output, when fault alarm comes and the circuit is Enable , the ouput is 100mA@24-27VDC. This function is available when J12 pin 3 is on the ON position. There must be a 6.8K Ohm resistor at the end of the circuit (EOL).

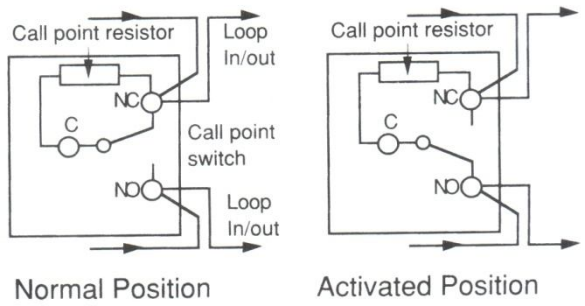
8.4.3 **+Bell-**: the two terminals will have a 24-27VDC output to drive a bell circuit then fire alarm comes. There must be a 6.8K Ohm resistor at the end of the circuit (EOL).. Note: sounder output circuit, should use polarities sounder, bell, strobe or

horn.

8.4.4 **+Detect-**: the two terminals connect with the detectors and manual call points. There must be a 6.8K Ohm resistor at the end of the circuit (EOL).

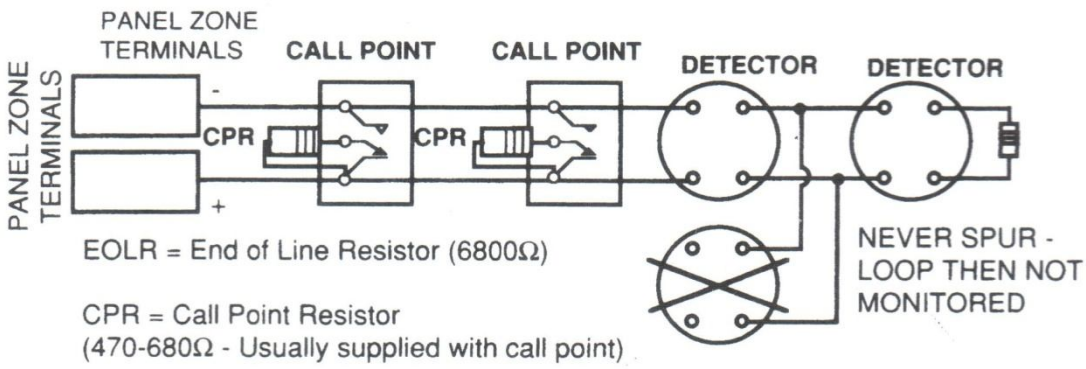
9 Wire diagram

9.1 Manual call point

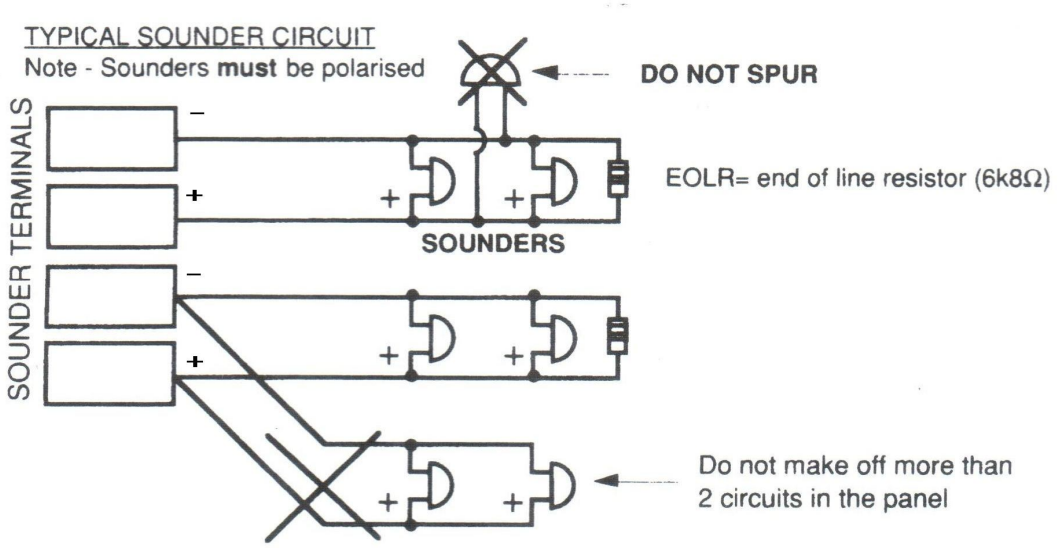


The call point resistor should be between 470 and 680 ohms.

9.2 Zone loop circuit



9.3 Sounder circuit



Note: Don’t pull in or out any cable or board when power is on!