# Conventional Fire Alarm Control Panel  AW-CFP2166

## User Manual

ASENWARE

Customizable Repeater

LPCB Approved

LED Indication lights
of any fault, alarm, status


1-32 zones
for option


Manual call point
with resetting key
built-in EOL


Alarm bell with built-in
diode and EOL

Recessed type

Can be connected
entrance LED indicator

Smoke/Heat detector

Heat detector is
rate of rise and fixed
temperature detection mode

# Fire Alarm Control Panel 1 Zone


- Analogue conventional detector inputs: 20 detectors or 10 MCPs maximum.
- Smaller size and easier for installation, but all-around.
- Maximum number of bells per CIE: 4 Bells.
- 2 relay-outputs: FIRE/FAULT.
- High-capacity batteries: 12V2.3Ah*2, over 20h for stand-by use.
- Automatic power switchover: mains power and stand-by power.
- Fault supervision and notification: inputs, sounder, mains/batteries.
- Evacuation: man-made fire alarm condition on panel.
- Silence: sounders and panel buzzer.
- Extensible application for GSM: inform user anytime by mobile telephone.

# Fire Alarm Control Panel 2/4 Zone


B type-Full metal shell **Wall Mounted Type**


C-Plastic front cover, metal back cover **Embeded Type**

- Analogue conventional detector inputs: 20 detectors or 10 MCPs maximum.
- Smaller size and easier for installation, but all-around.
- Maximum number of bells per CIE: 6 Bells.
- 2 relay-outputs: FIRE/FAULT.
- High-capacity batteries: 12V2.3Ah*2, over 20h for stand-by use.
- Automatic power switchover: mains power and stand-by power.
- Fault supervision and notification: inputs, sounder, mains/batteries.
- Evacuation: man-made fire alarm condition on panel.
- Silence: sounders and panel buzzer.
- Extensible application for GSM: inform user anytime by mobile telephone.

# Fire Alarm Control Panel 6/8 Zone


B type-Full metal shell **Wall Mounted**


C-Plastic front cover, metal back cover **Embeded Type**

- Analogue conventional detector inputs: 20 detectors or 10 MCPs maximum.
- Smaller size and easier for installation, but all-around.
- Maximum number of bells per CIE: 8 Bells.
- 2 relay-outputs: FIRE/FAULT.
- High-capacity batteries: 12V2.3Ah*2, over 20h for stand-by use.
- Automatic power switchover: mains power and stand-by power.
- Fault supervision and notification: inputs, sounder, mains/batteries.
- Evacuation: man-made fire alarm condition on panel.
- Silence: sounders and panel buzzer.
- Extensible application for GSM: inform user anytime by mobile telephone.

# Fire Alarm Control Panel 12-32  Zone

# Conventional Fire Alarm Control Panel

- Buttons

  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.

  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.

  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.

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

  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.

  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.

# Conventional Fire Alarm Control Panel

- LED indicators:

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

  Mains Fault: this LED on shows the main power 240VAC or 110VAC is off. Battery Fault: this LED on shows the battery is fault or connection is broke.

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

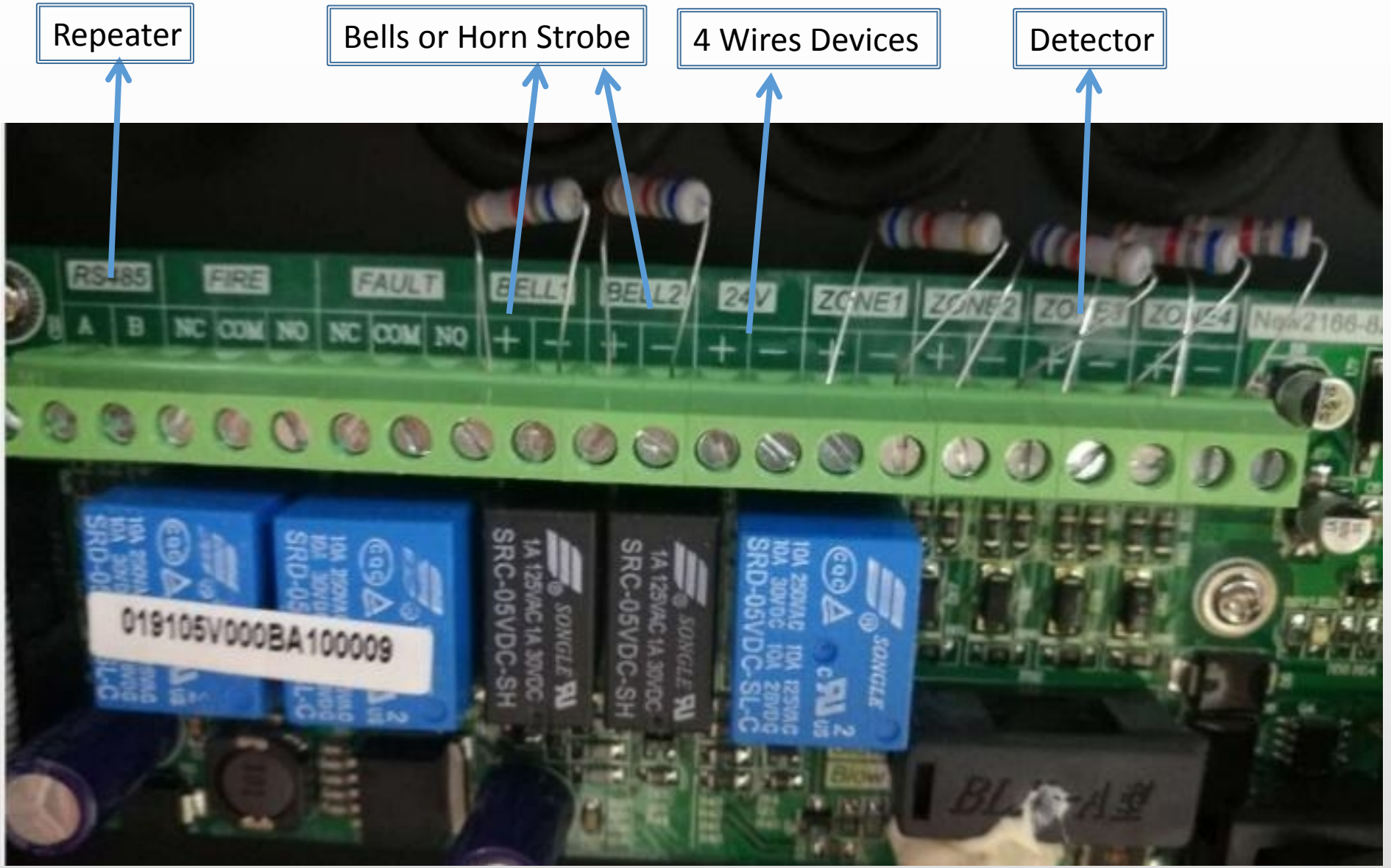
  General Fault: this LED on shows there are one or more faults in the internal panel or the input / output circuit of the panel.

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

  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.

  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.

# Conventional Fire Alarm Control Panel



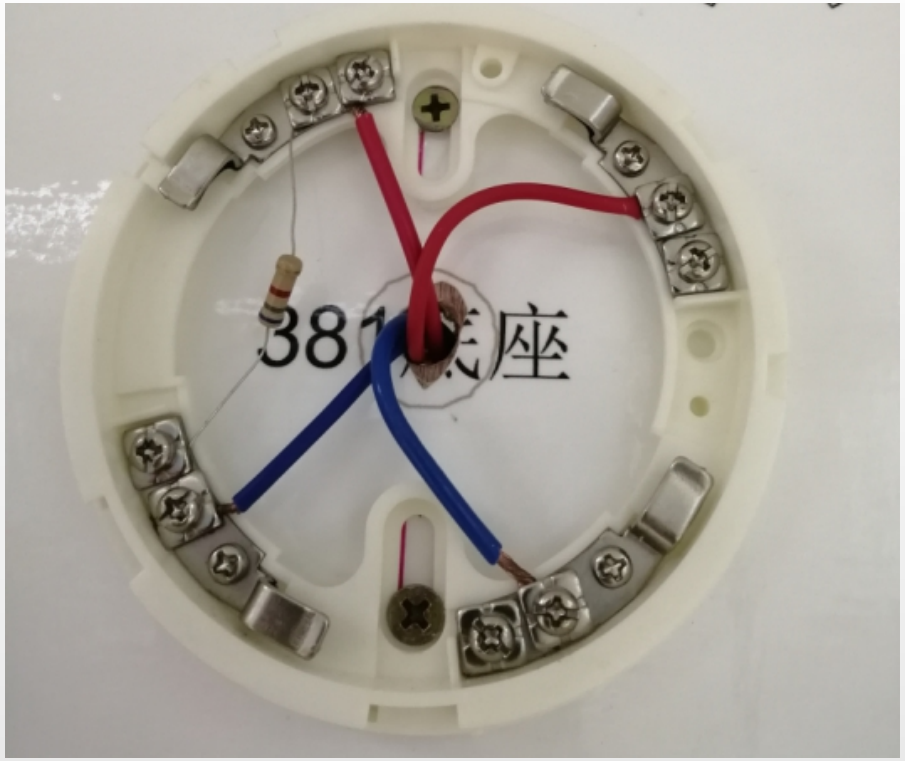
# Conventional Smoke Detector Parameters

| | |
|---|---|
| Operating Voltage Range: | 9 to 28 VDC Non-polarized |
| Standby Current: | ≤120uA@24VDC |
| Maximum Alarm Current(LED on): | ≤15mA@24VDC<br>（1K Ohm current-limiting resistance） |
| Operating Humidity Range: | ≤95%RH(40℃±2℃)RelativeHumidity,Non-condensing |
| Operating Temperature Range: | -10℃ to 50℃(14ºF to 122ºF) |
| Smoke Alarm Sensitivity: | 0.1-0.15dB/m |
| Height: | 48.2mm installed in Base |
| Diameter: | 99.45mm |
| Standard Number ref: | EN 54-7:2000 |
| EC certificate: | 0832-CPR-F2071 |

# Conventional Heat Detector Parameters

| | |
|---|---|
| Operating Voltage Range: | 9 to 28 VDC Volts Non-polarized |
| Standby Current: | ≤120uA@24VDC |
| Maximum Alarm Current(LED on): | ≤15mA@24VDC<br>（1K Ohm current-limiting resistance） |
| Operating Humidity Range: | ≤95%RH(40℃±2℃)RelativeHumidity,Non-condensing |
| Operating Temperature Range: | -10℃ to 50℃(14ºF to 122ºF) |
| Fix Temperature Alarm: | 57℃(135ºF)A2R |
| Rate of rise Alarm: | 7.1℃/5S A2R |
| Height: | 48.2mm installed in Base |
| Diameter: | 99.45mm |
| Standard Number ref: | EN 54-7:2000 |
| EC certificate: | 0832-CPR-F2072 |

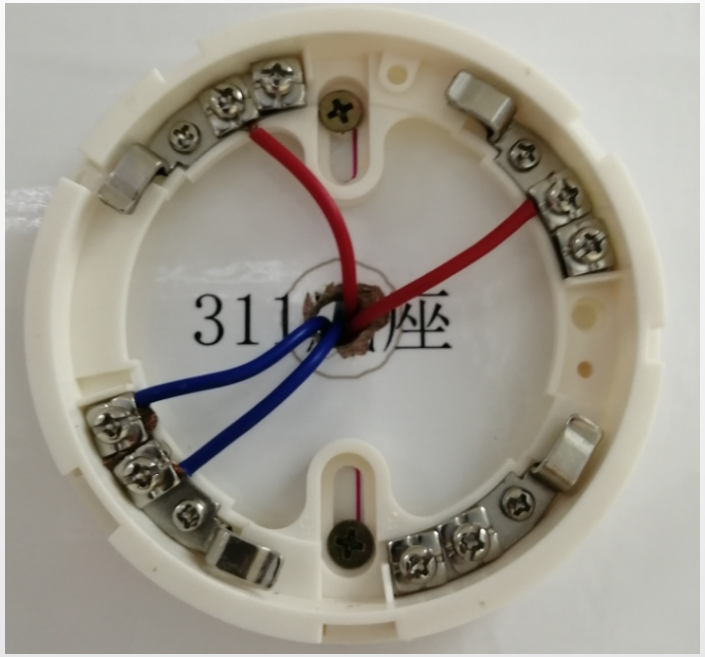
# Wire Connection



- **Conventional Smoke Detector** - Model no.: AW-CSD381
- Wire connection point:
- No.2: IN + ( zone input + )
- No.6: Remote indicator(+) / Next detector IN (+)
- No.5: IN - ( zone input - )
- No.3: Remote indicator(-).

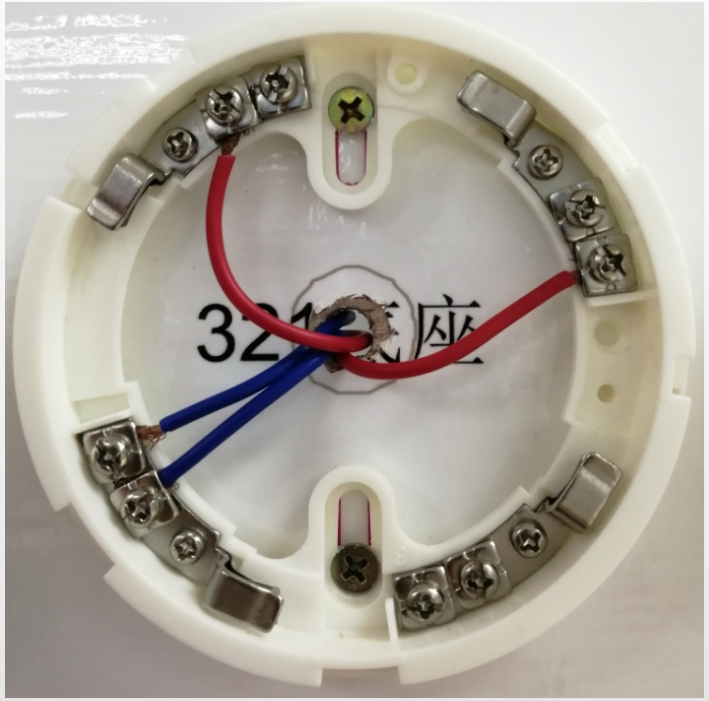
Note: The last detector need to connect a 6.8K resistor

# Wire Connection



- **Conventional Smoke Detector** - Model no.: AW-CSD311
- Wire connection point:
- No.2: IN + ( zone input + )
- No.6: Remote indicator(+) / Next detector IN (+)
- No.5: IN - ( zone input - )
- No.3: Remote indicator(-).

# Wire Connection



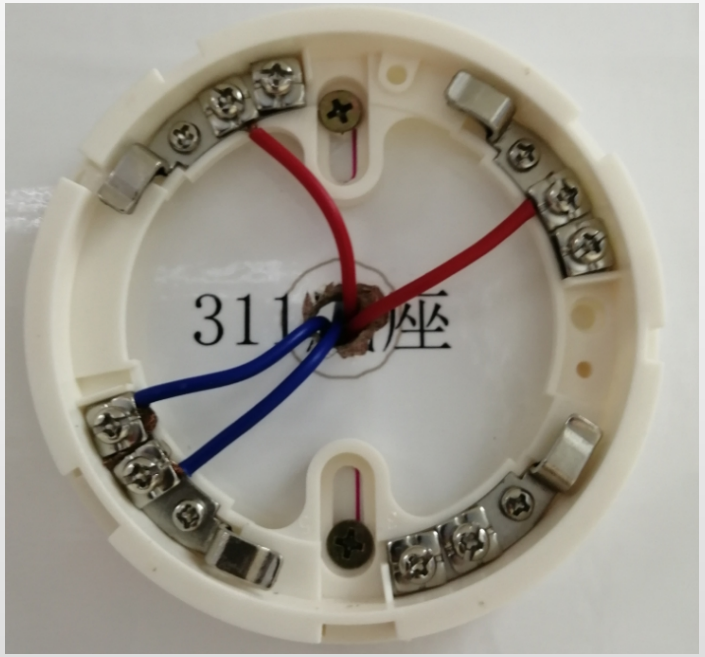
- **Conventional Heat Detector** - Model no.: AW-CSD321
- Wire connection point:
- No.2: IN + ( zone input + )
- No.6: Remote indicator(+) / Next detector IN (+)
- No.5: IN - ( zone input - )
- No.3: Remote indicator(-).

# Wire Connection

- **Conventional Heat Detector** - Model no.: AW-CTD382
- Wire connection point:
- No.2: IN + ( zone input + )
- No.6: Remote indicator(+) / Next detector IN (+)
- No.5: IN - ( zone input - )
- No.3: Remote indicator(-).

# Wire Connection

- **Conventional Smoke Detector** with flash and buzzer - Model no.: AW-CSD812
- Wire connection point: No.2: IN + ( zone input + ) No.6: Remote indicator(+) / Next detector IN (+)
- No.5: IN - ( zone input - ) No.3: Remote indicator(-).



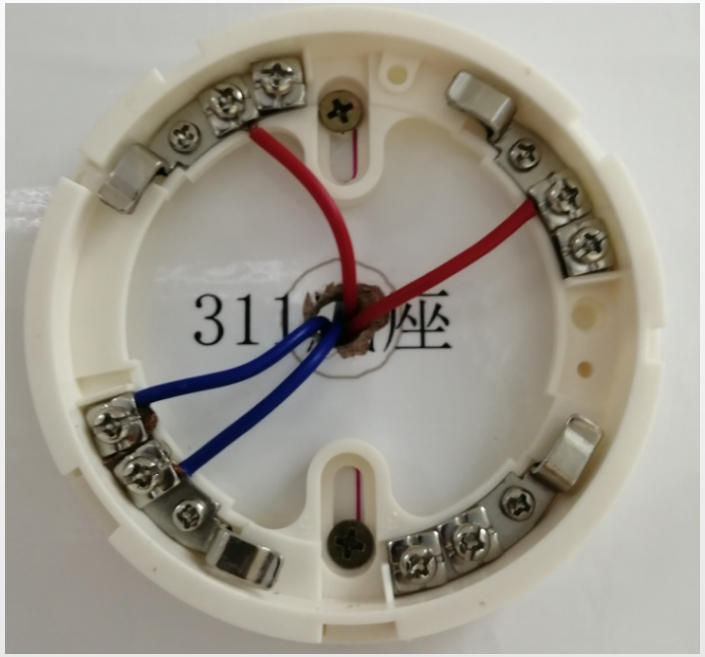
# Wire Connection

- Same as other detectors:
- conventional Smoke Detector - Model no.: AW-CSD811
- conventional Heat Detector - Model no.: AW-CTD821
- conventional Smoke & Heat Detector - Model no.: AW-CSH831
- Wire connection point: No.2: IN + ( zone input + )

  No.6: Remote indicator(+) / Next detector IN (+)

  No.5: IN - ( zone input - )

  No.3: Remote indicator(-).



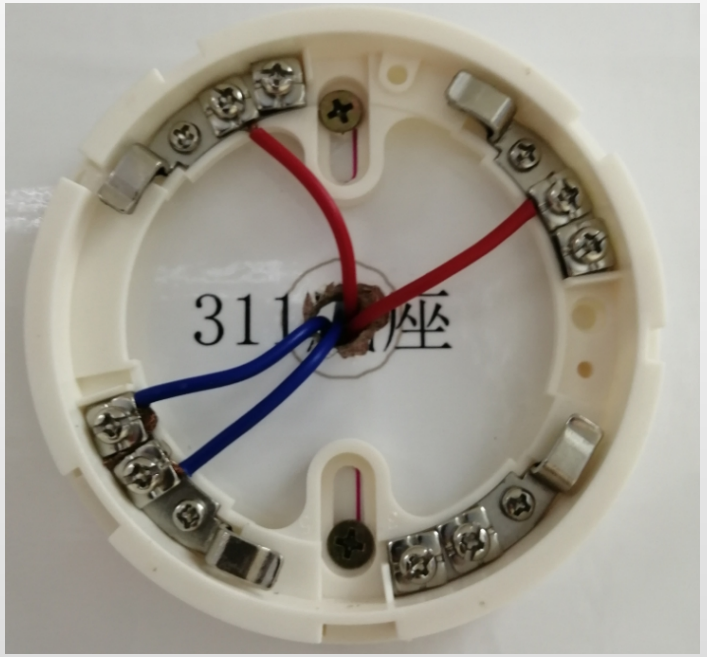
# Wire Connection

- **Conventional Gas Detector** - Model no.: AW-LPG841
- Wire connection point: No.6: DC 24V POWER IN (Nonpolar).

  No.5: DC 24V POWER IN (Nonpolar)

  No.3: Alarm Out (com )

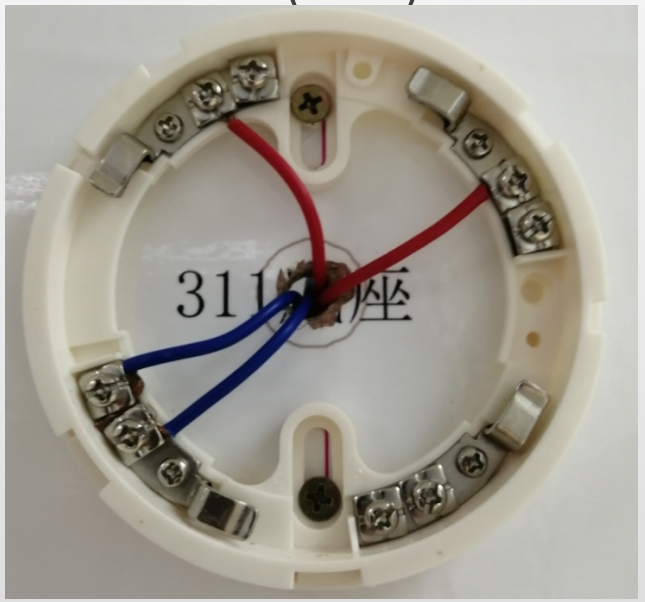
  No.2: Alarm Out ( NO/NC)



# Wire Connection

- Conventional Gas Detector - Model no.: AW-LPG841
- Conventional CO Gas Detector - Model no.: AW-CCO-851-4W
- Wire connection point: No.6: DC 24V POWER IN (Nonpolar) No.5: DC 24V POWER IN (Nonpolar)

No.2: Alarm Out (NO/NC) No.3: Alarm Out (com )



# Wire Connection

- **Conventional CO Gas Detector** - Model no.: AW-CCO-851-4W
- Wire connection point: No.6: DC 24V POWER IN (Nonpolar). No.5: DC 24V POWER IN (Nonpolar)

No.2: Alarm Out (NO/NC) No.3: Alarm Out (com )

# AW-CRP2166 Conventional Repeater


AW-CRP2166 floor display of fire alarm has the following features:

- Easy installation;
- Low maintenance cost;
- Connect to AW-CFP2166 control system;
- Up to 32 AW-CRP2166 floor display can connect to each AW-CFP2166 control system;
- Communicate between AW-CFP2166 control system and AW-CRP2166 floor display by RS485;
- AW-CRP2166 floor display can gain power from AW-CFP2166 control system;
- Terminal connection between AW-CRP2166 floor display and AW-CFP2166 control system(Easy connection)

# AW-CRP2166 Conventional Repeater


## Wires connection

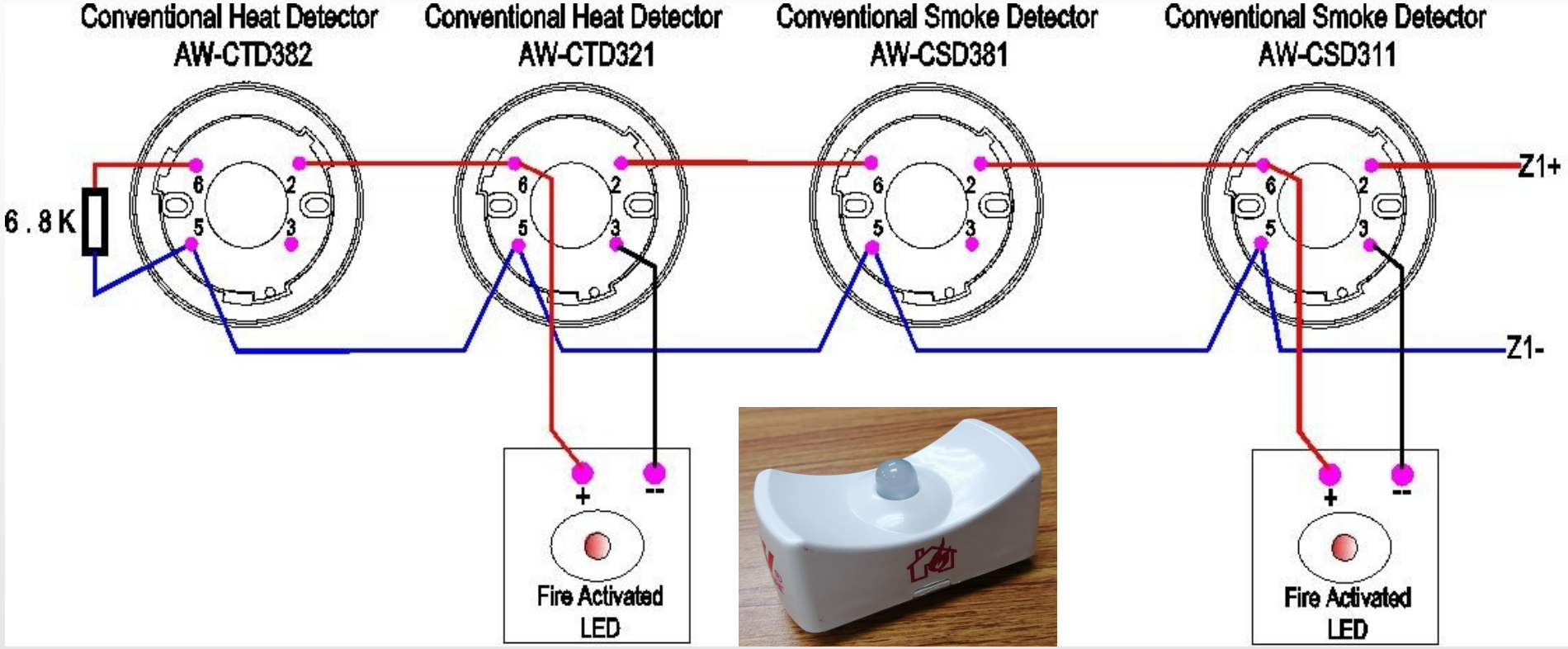
Wire connection point:

A: IN + ( RS485 + )  B: IN - ( RS485 - )

+24V: 24V input (+ )  GND: 24V input (-)

# Wiring connection:

For Conventional Smoke/ Heat/ Smoke & Heat detector and Entrance indicator



# **Conventional Manual Call Point(Resettable)**- Model: AW-D135C

**Indication:**

There are 2 LEDs (green and red) at the top right corner of the MCP.

Normal operation: The green LED blinks about 1 time per second at 24VDC

Alarm: The red LED lights and green LED extinguished.

Reset: At the left bottom corner, there is a L-shaped hole for reset.

Push the key in, and then pullout, the reset is complete.

# **Conventional Manual Call Point(Resettable)**- Model: AW-D135C

**Wires connection**

The cable for connecting to fire panel, 0.5mm2 -1.5mm2 is recommended.

The green terminal is for wiring to Fire Panel Zone.

**Noted:**
End of line-Jump in √
Normal wiring-Jump in ×

# **Conventional Manual Call Point (Resettable)**- Model: AW-CMC2166-6


**Indication:**

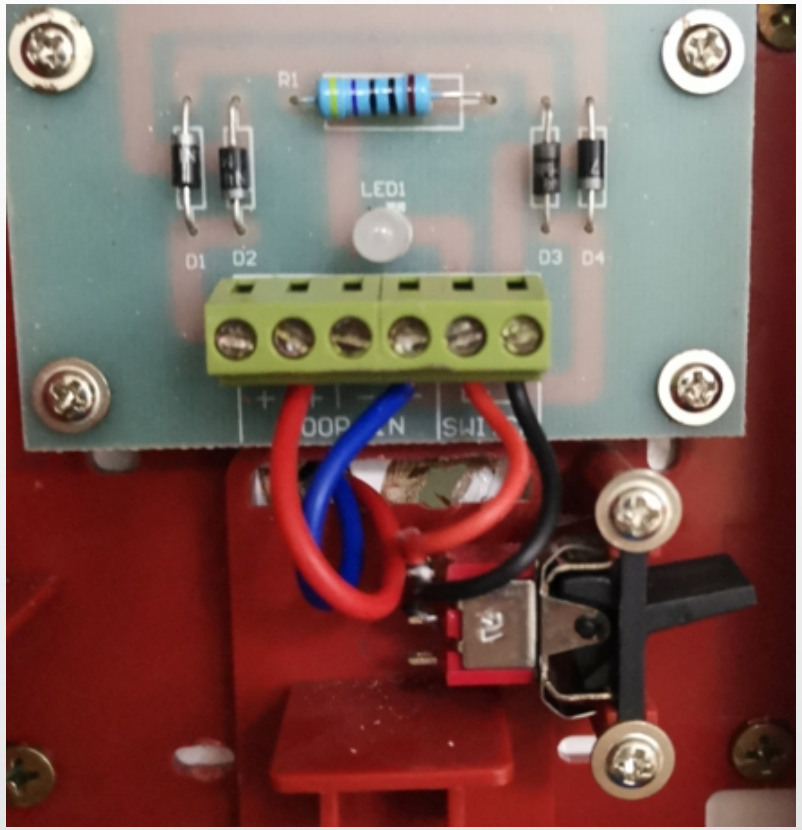
Pushing in and then pulling down on the handle activates the normally-open alarm switch.

Once latched in the down position, the word “ACTIVATED” appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag.

Resetting the station: insert the key, twist one quarter-turn, then open the station’s front cover, causing the spring-loaded operation handle to return to its original position.

The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station’s front cover, which automatically resets the switch.

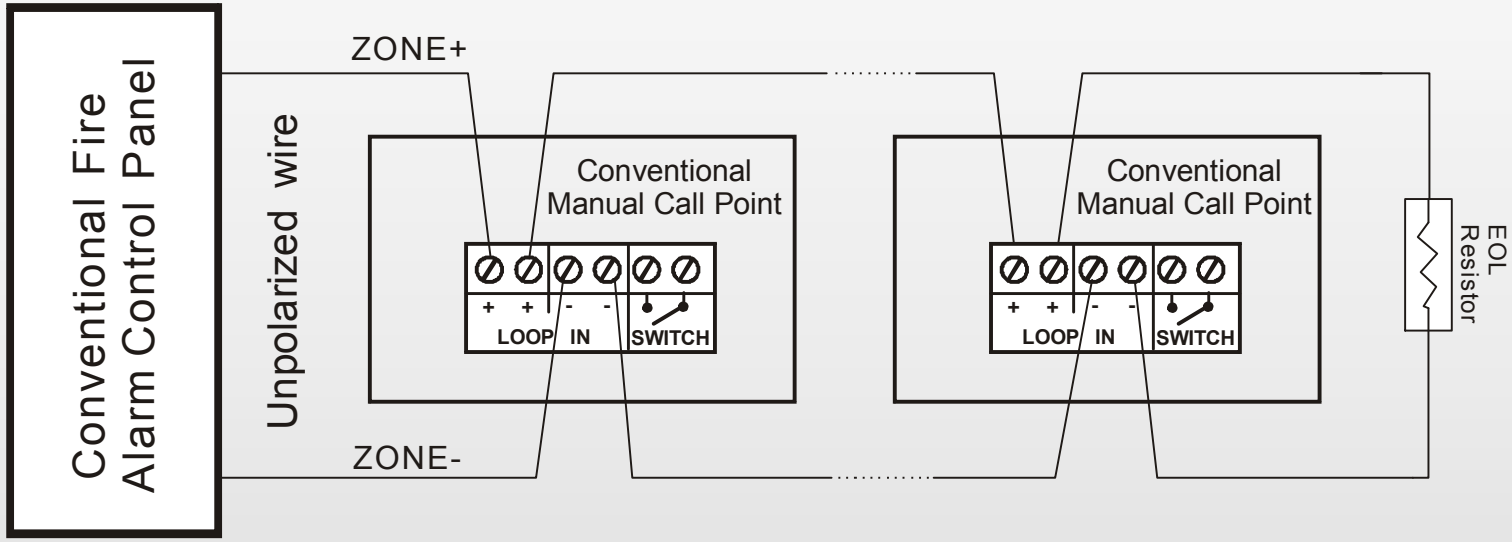
# **Conventional Manual Call Point (Resettable)**- Model: AW-CMC2166-6



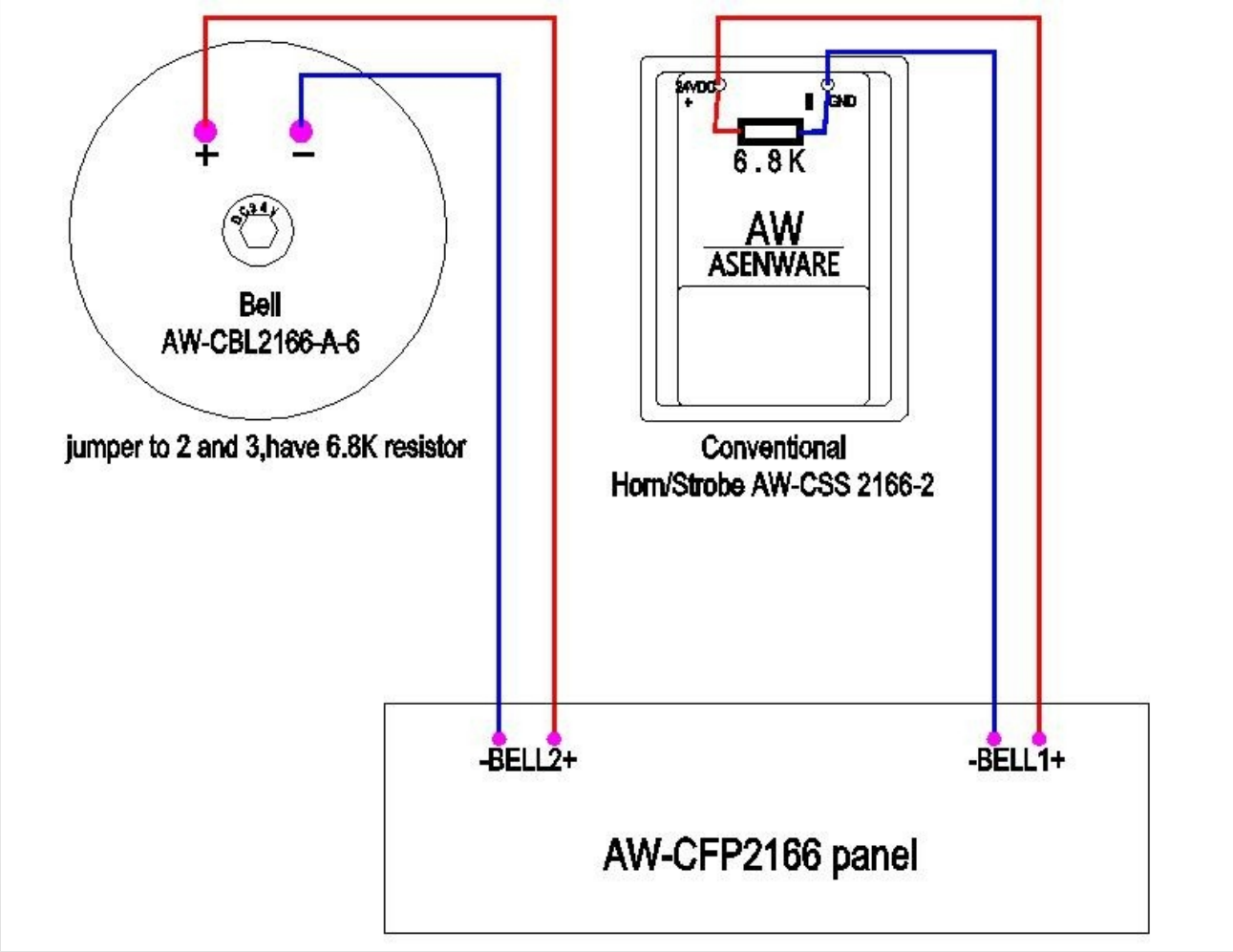

## Wires connection

Connection between Loop IN + and - . Resistance (6.8 KΩ)

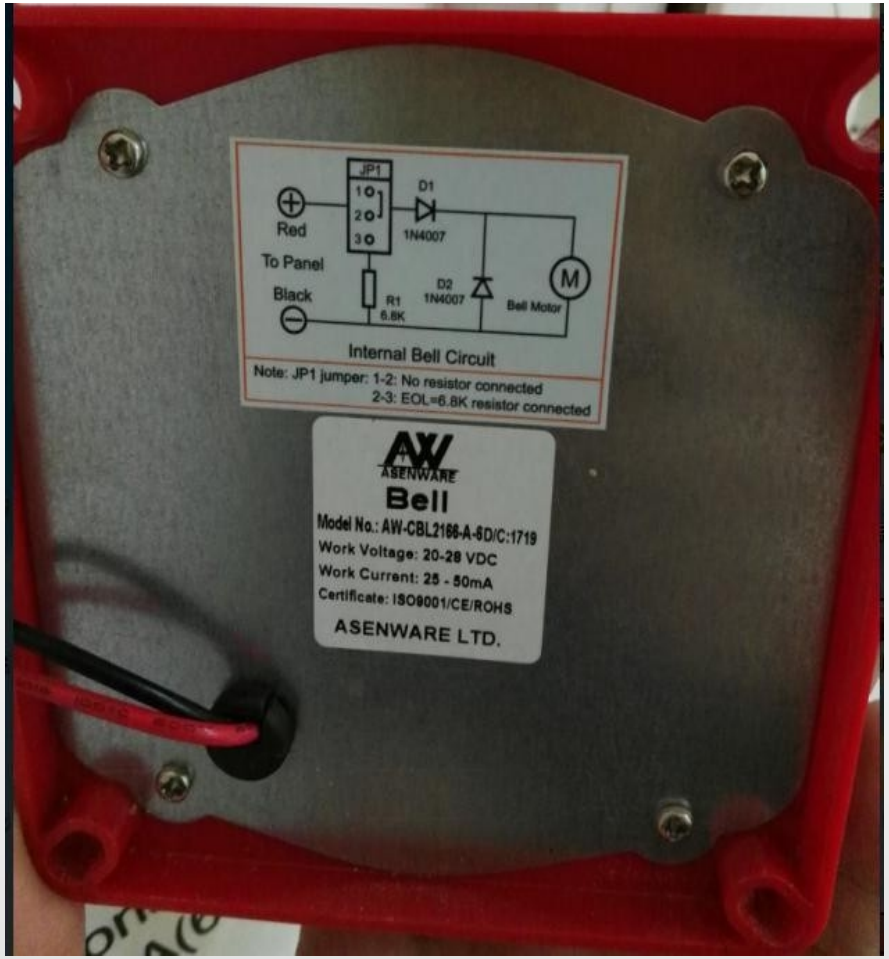
needs between this connection.



# Wire connection of Conventional Fire Strobe Sounder and Fire Bell



# **Conventional Fire Bell**- Model: AW-CBL2166




## Wires connection

- Wire connection of Bell
- it has Diode - IN4007, so no need to add diode
- Note：JP2 and JP3 means with 6.8K resistor, JP1 and JP2 means no 6.8K resistor

# Conventional Strobe Sounder- Model: AW-CSS2166-2

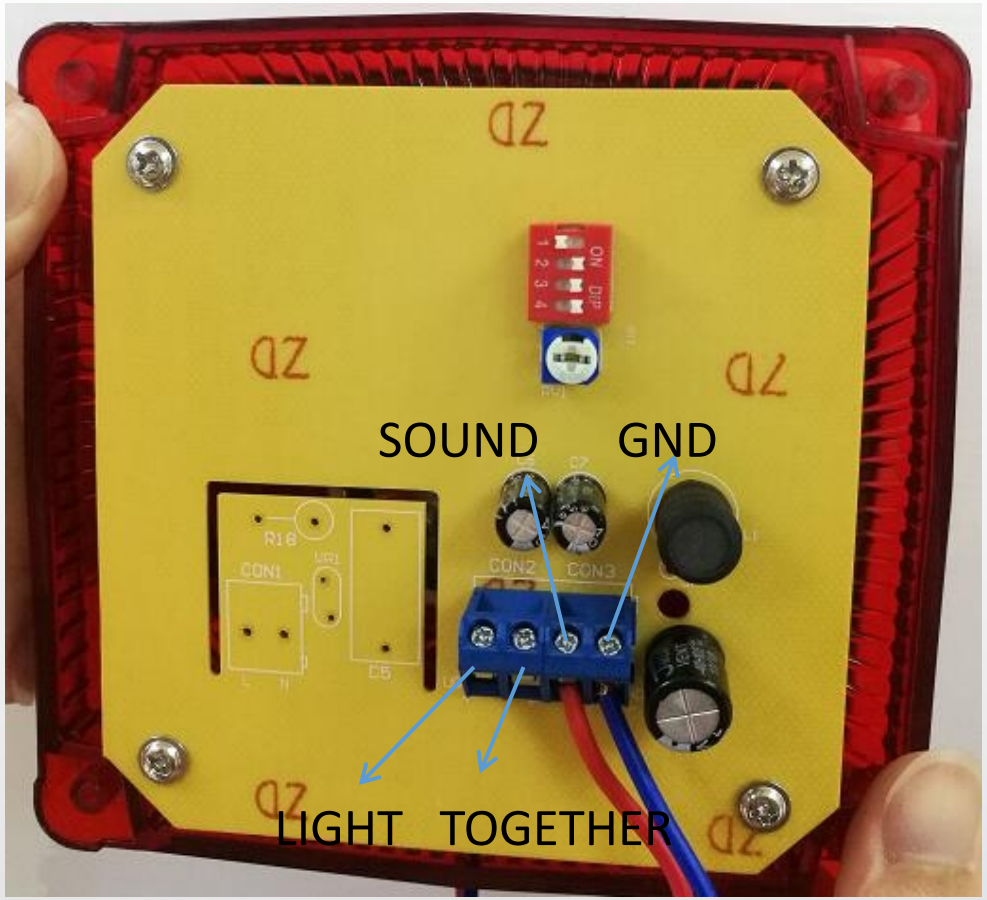

## Wires Connection

Wire connection of Conventional Fire Strobe Sounder.

DC power supply connection.

Add a 6.8 KΩ resistance at the end of the circuit.

# **Conventional Strobe Sounder**- Model:AW-CSS2166-4




## Wires connection

- Connection between SOUND + & GND -

# **Conventional Strobe Sounder**- Model:AW-CSS2166-5

**Technical Parameter**

1. Operating Voltage: DC20V~28V
2. Working Current: 300mA
3. Flash Period: ≤2s
4. Temperature Range: -10℃ ~ +50℃
5. Humidity Range: 0%~95%RH
6. Sound Pressure Level: ≥112dB
7. Type of Sound Alarm: 1 kind

**Wiring**

| | |
|---|---|
| Red Wire | Control Input + (DC 24V+) |
| Black Wire | Control Input - (DC 24V-) |

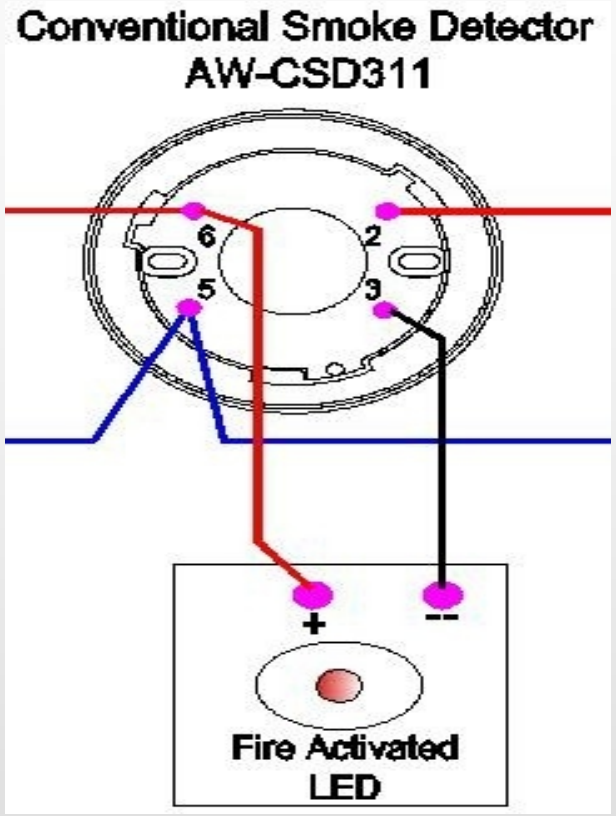
## Wires connection

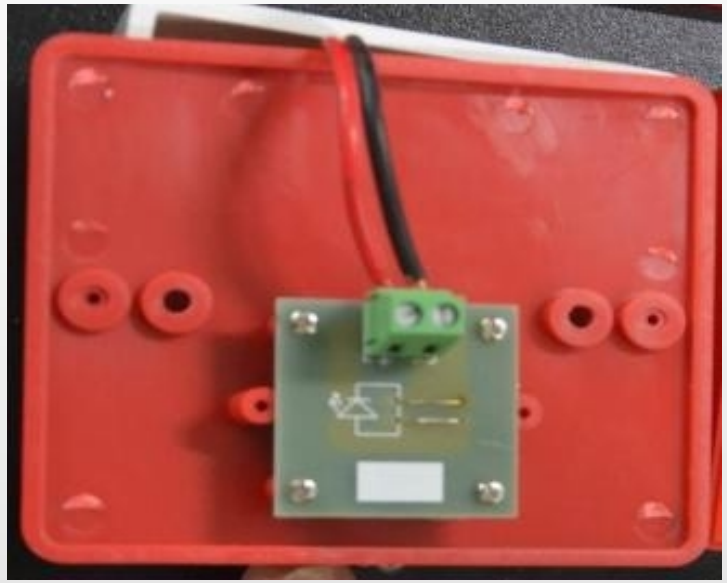
- Connection between SOUND + & GND -

# **Entrance LED Indicator**- Model:AW-EL102

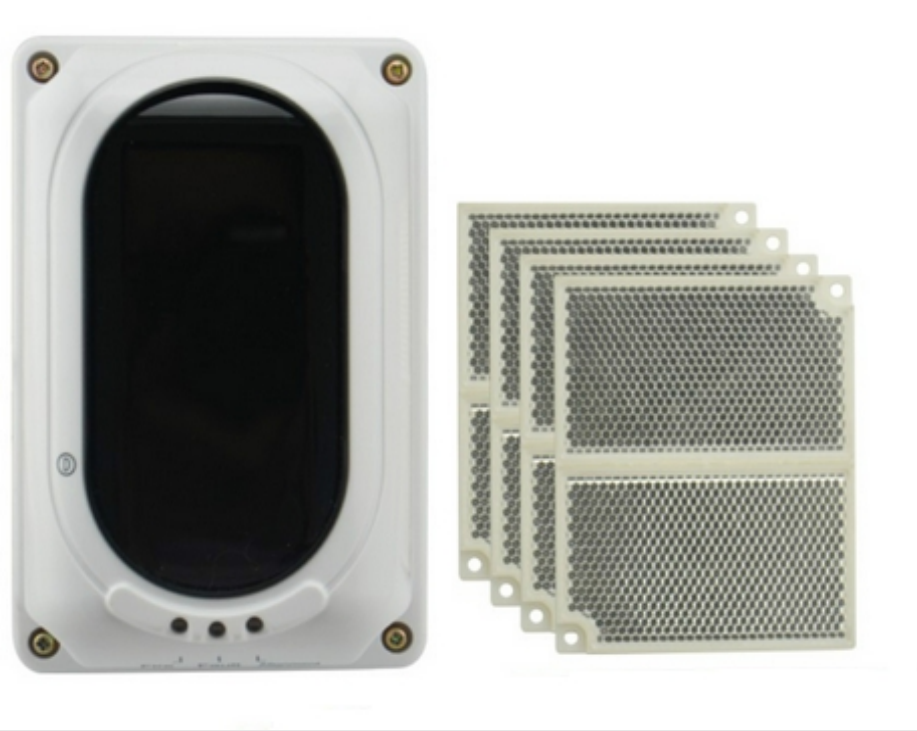
**Wires connection:**

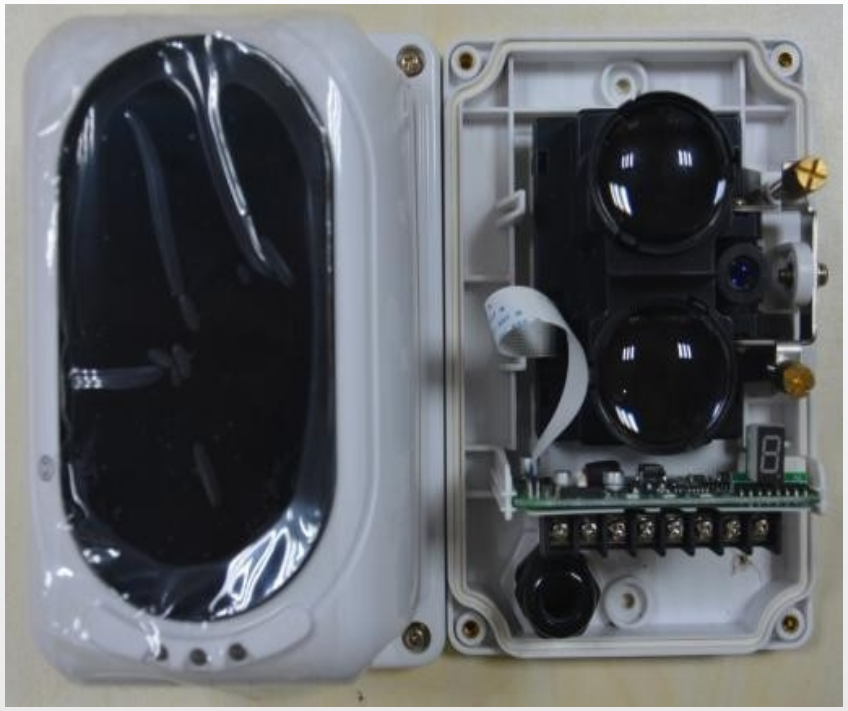
Entrance LED/Door Indicator: This is connected with conventional smoke detector. This connection will come from detector **No.6 ( Remote indicator + ) and detector No.3 ( Remote indicator - )**. Entrance LED/Door Indicator is installed on the door up wall.



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.





# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Technical Specification

| | | | |
|---|---|---|---|
| Part Number | AW-BK901 | | |
| Standard | | | |
| Compliance | EN54-12 | | |
| Fire Detection and Alarm Systems | BS 5839 Part 1:2002 | | |
| Specification | | | |
| Operating Voltage | 20 V to 28 V DC | | |
| Current Parameters | Standby:23mA | Commission:40mA | Alarm:33mA |
| Beam Sensor Sensitivity [via Encoder] | Level 1: 2.6 dB | High Sensitivity | |
| | Level 2: 3.4 | Medium Sensitivity | |
| | Level 3: 4.8 dB Low Sensitivity | | |
| Beam Pathway Length [via Encoder] | Span 1: 8 to 20 meters Short Path | | |
| | Span 2: 20 to 40 meters Short Path | | |
| | Span 3: 40 to 70 meters Normal Path | | |
| | Span 4: 70 to 100 meters Long Path | | |

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

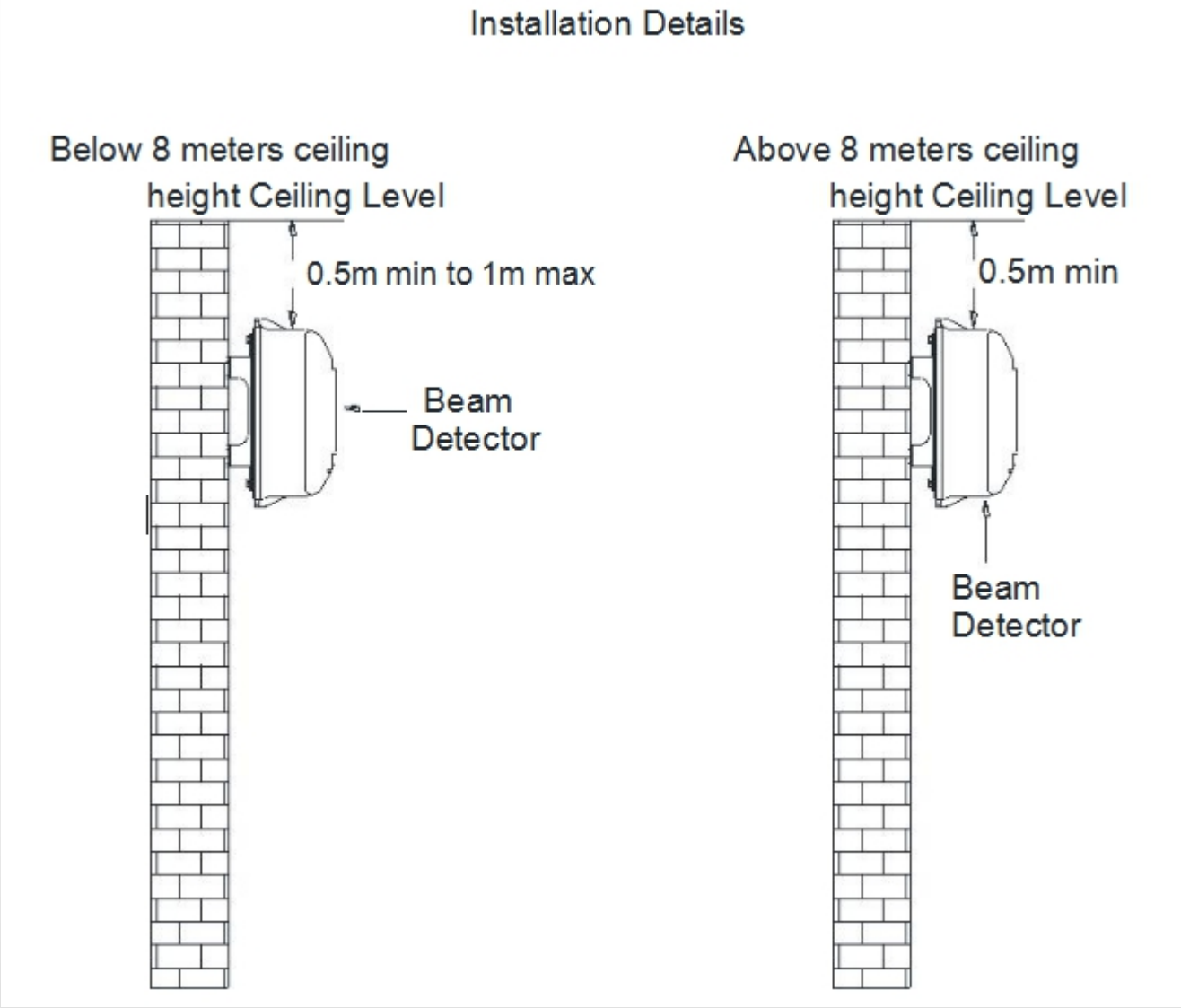
| | |
|---|---|
| Beam Path Angle | ±0.5ºDirectional |
| Alignment Guide | Laser Beam Pointer |
| Digital Display Guide | Nixie Tube |
| LED Indicator Guide | Red: Fire ; Yellow: Fault ; Green: Alignment |
| Reset Time | Less than 2 Second |
| Relay Capacity [Fire & Fault] | Normally Open/ 2.0 A; 30 VDC |
| Physical | |
| Material / Colour | ABS / White |
| Dimension / Weight | L:190.87 x W:126.87 x H:91.96 mm / 440 gm |
| Weight | 0.130 Kg with base |
| Environmental | |
| Operating Temperature / Protection | -10°C to 55°C / IP30 [IP66 glue seal] |
| Rating | |
| Humidity | 0 to 95% Relative Humidity, Non condensation |

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.


## LED Indicators

| LED Indicators | Colour | Function |
|---|---|---|
| Fire | Red | Illuminates when at least one fire alarm event occur. |
| Fault | Yellow | Illuminates when at least one fault alarm event occur in the Detector |
| Alignment | Green | Illuminates during the commissioning |

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.




**Installation**:

1. Under flat spare area. If the ceiling height is less than 8 meters, the beam detector should be installed 0.5 meter to 1 meter below the ceiling level. Refer to Figure 3.

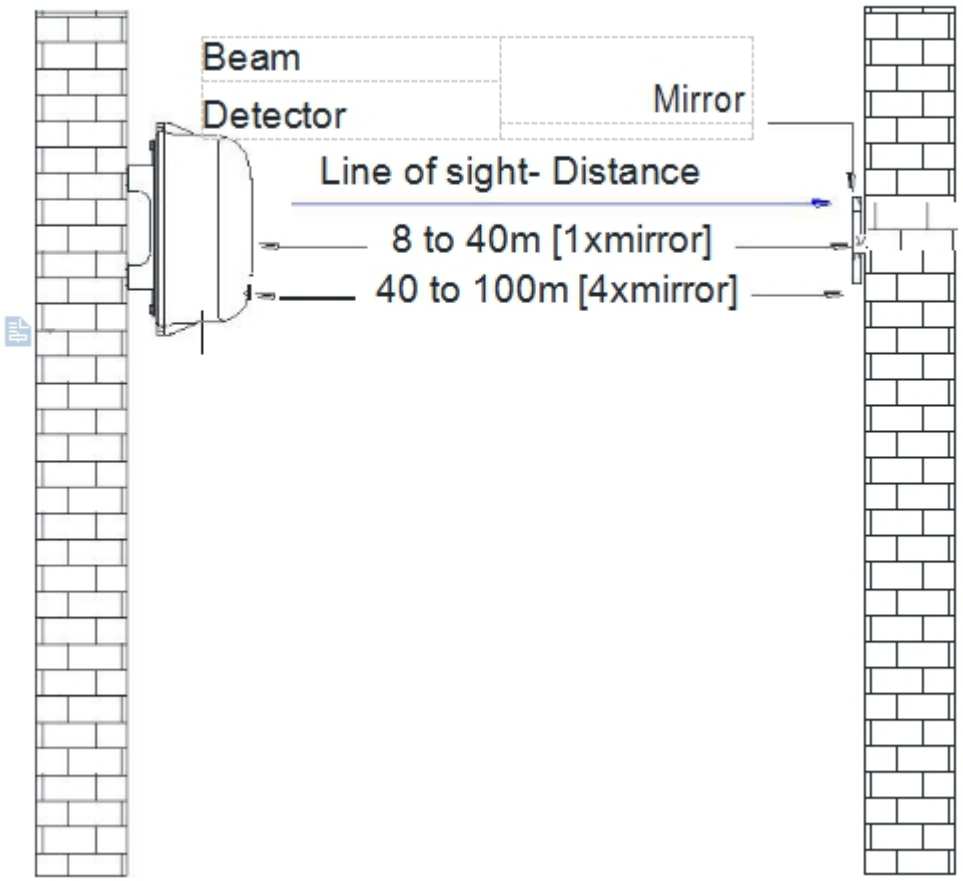
2. Under flat spare area. If the ceiling height is more than 8 meters, the beam detector should be installed minimum of 0.5 meter below the top ceiling. Refer to Figure 3.

3. The chosen for the location should be clean and dry and not subject to shock, vibration or electro-statistic discharge, and free from glass wall, sunlight direction any reflective barrier.

4. Make sure that the beam path is free form obscuration against moving items

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

Figure 6: Mounting of Reflector Mirror




## Mounting of the Reflective Mirror

1. Depending on the project requirement, if the distance between the detector and the reflector mirror is 8m-40m, install one reflector is enough; if the distance is 40m-100m, four reflectors is required. Refer to Figure 6

2. Mark the position of the fixing holes plastic expansion bolts

3. Fix the reflector mirror using two ST4x30 screw, in the case of one unit mirror, do the same step for other mirror if required. Refer to Figure 6.

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

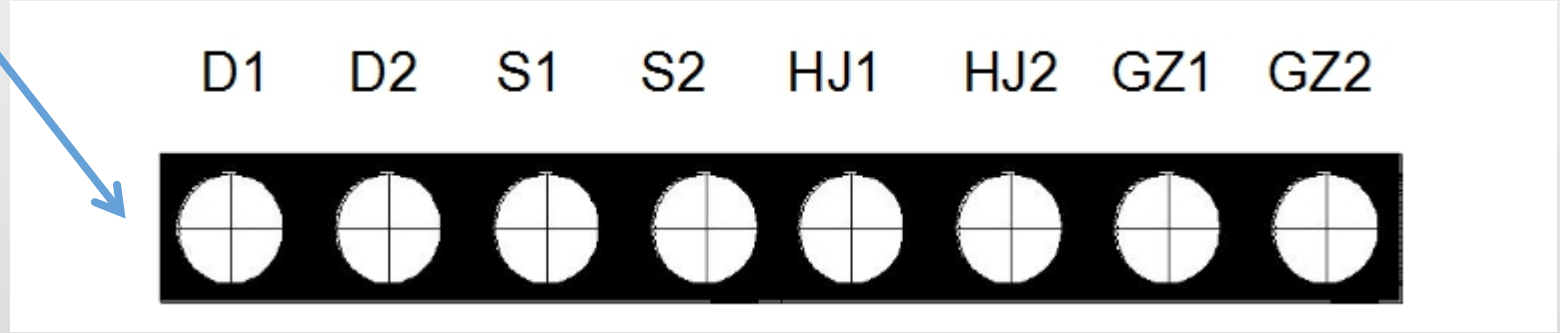
## Cabling Details

Cables should be brought into the detector using the supplied glad cable.

The maximum size of the cable which can be terminated is 1.5mm2.

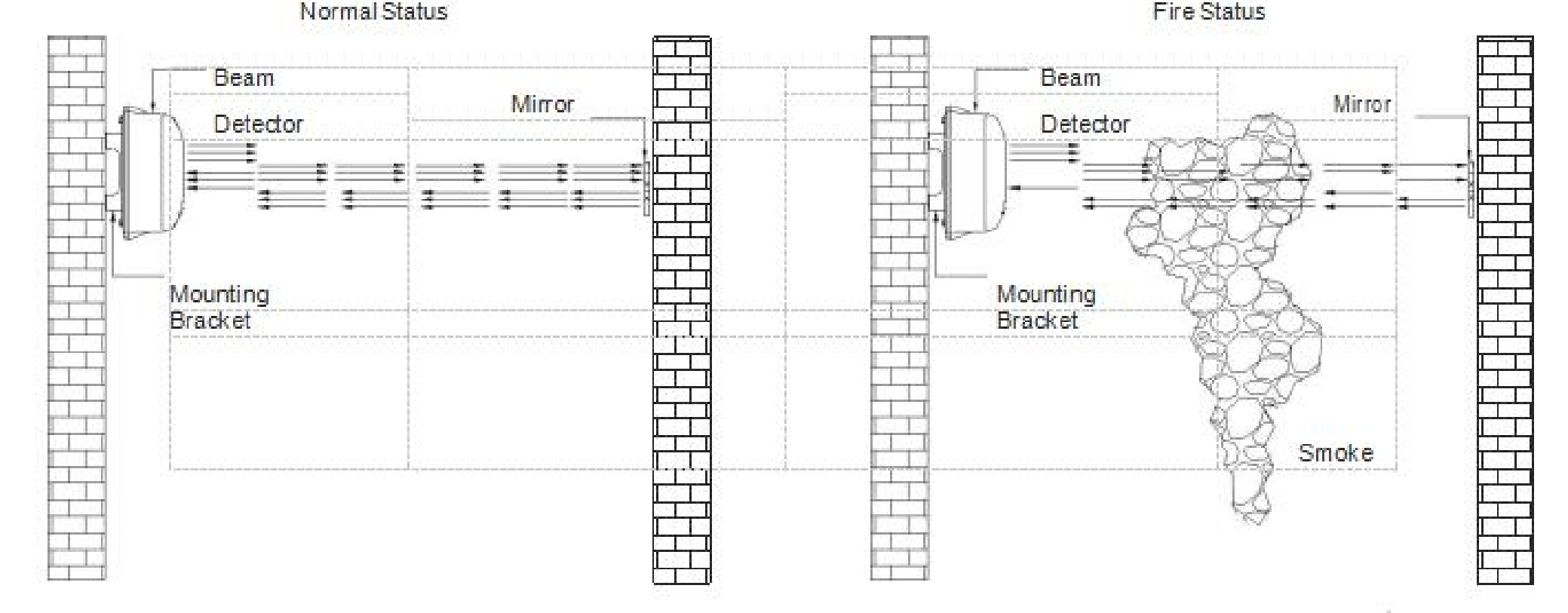
Observe the polarity.

1. Terminal D1 (+) and D2 (-) for connecting Power supply [24VDC]
2. Terminal S1 and S2 for connecting handheld programmer
3. Terminal HJ1 and HJ2 for connecting Fire signal relay output [Normally Open]



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

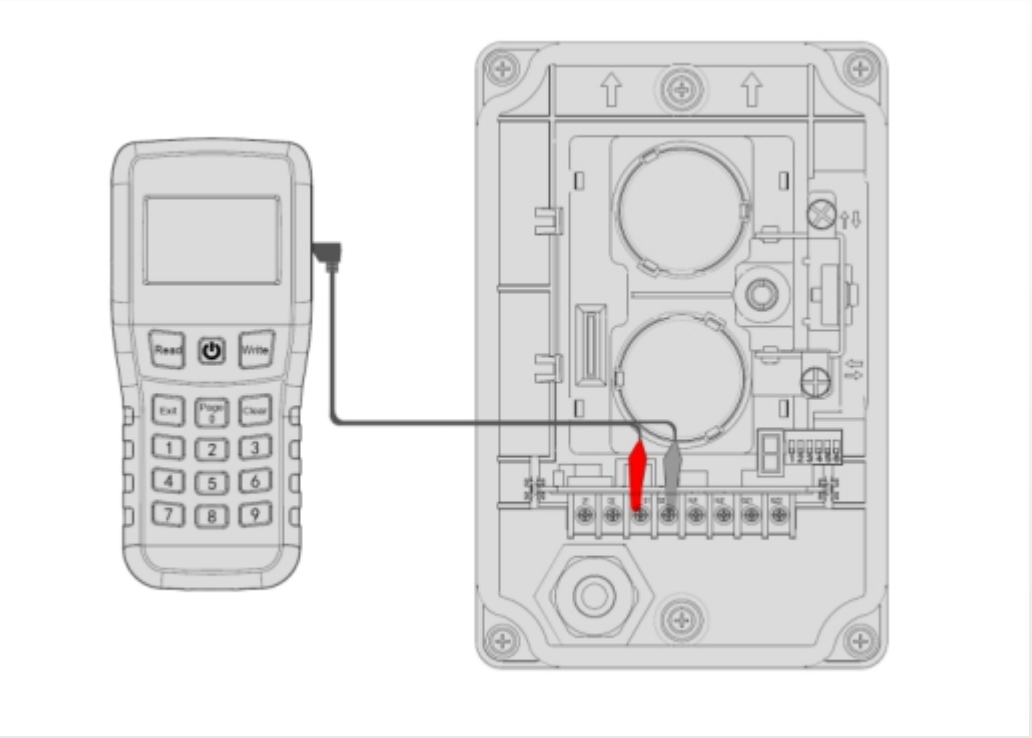
## Principle of the Beam Detector



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## To View the Detector Parameter

1. Connect the programming cable to S1 and S2 terminals. Polarity is not required and detector must be powered off.
2. Switch on the programmer, then press button “1” to view the address [for addressable system use only], code and sensitivity level.
3. Press button “Page” to view the Span parameter
4. Press again the “Page” to return to the previous parameter
5. Press button “Exit” to clear and exit.



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Way 1-To adjust the Sensitivity-Using Programmer

1.Connect the programming cable to S1 and S2 terminal. Polarity is not required and detector must be powered off.

Reference:

Beam Pathway Length

Span 1: 8 to 20 meters Short Path
Span 2: 20 to 40 meters Short Path
Span 3: 40 to 70 meters Normal Path
Span 4: 70 to 100 meters Long Path

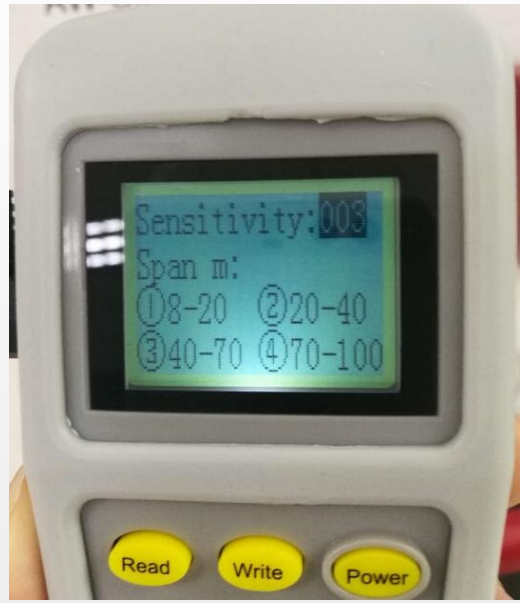
2.Switch on the programmer, then press button “3” then display “Sensitivity and Distance (m)”.

3.Then enter the desire sensitivity value from 1,2,3 or 4 and then press “Write”. If display “Success”, it means the entered sensitivity is confirmed. If display “Fail”, it means failure to program the sensitivity.

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Way 1-To adjust the Sensitivity-Using Programmer

1. Connect the programming cable to S1 and S2 terminal. Polarity is not required and detector must be powered off.




Reference:

Beam Sensor Sensitivity value

Level 1: 2.6 dB High Sensitivity

Level 2: 3.4 dB Medium Sensitivity

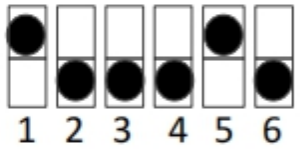
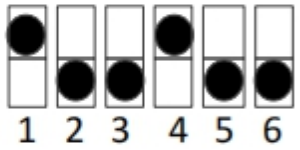
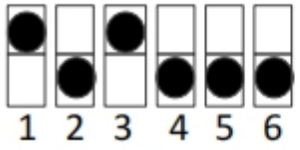
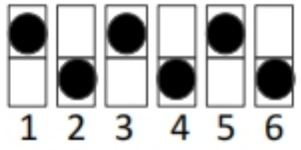
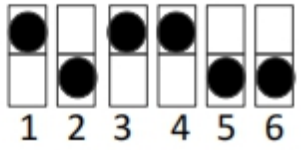
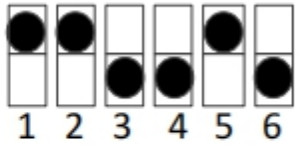
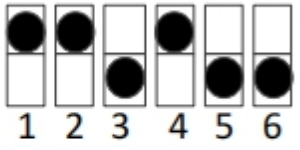
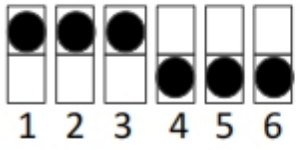
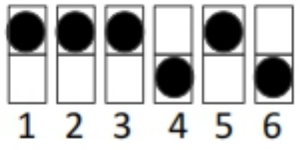
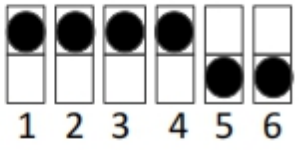
Level 3: 4.8 dB Low Sensitivity

2. Switch on the programmer, then press button “3” then display “Sensitivity and Distance (m)”

3. Then enter the desire sensitivity value from 1,2,or 3 and then press “Write”. If display “Success”, it means the entered sensitivity is confirmed. If display “Fail”, it means failure to program the sensitivity.

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

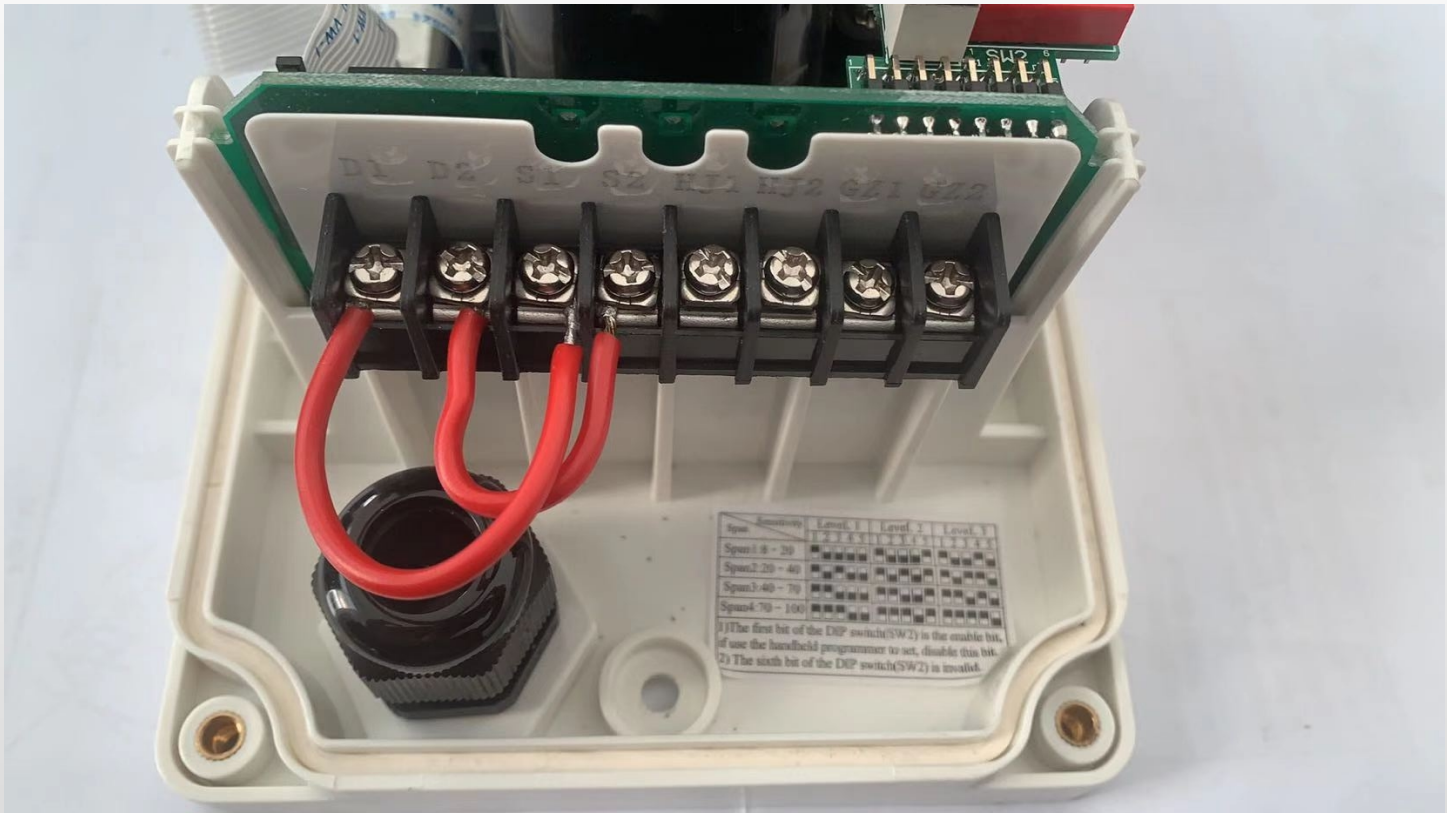
## Way 2-To adjust the Sensitivity- DIP Switch

| Span \ Sensitivity | Level 1 | Level 2 | Level 3 |
|---|---|---|---|
| Span 1: 8~20m |   |   |   |
| Span 2: 20~40m |   |   |   |
| Span 3: 40~70m |   |   |   |
| Span 4:70~100m |   |   |   |

**Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

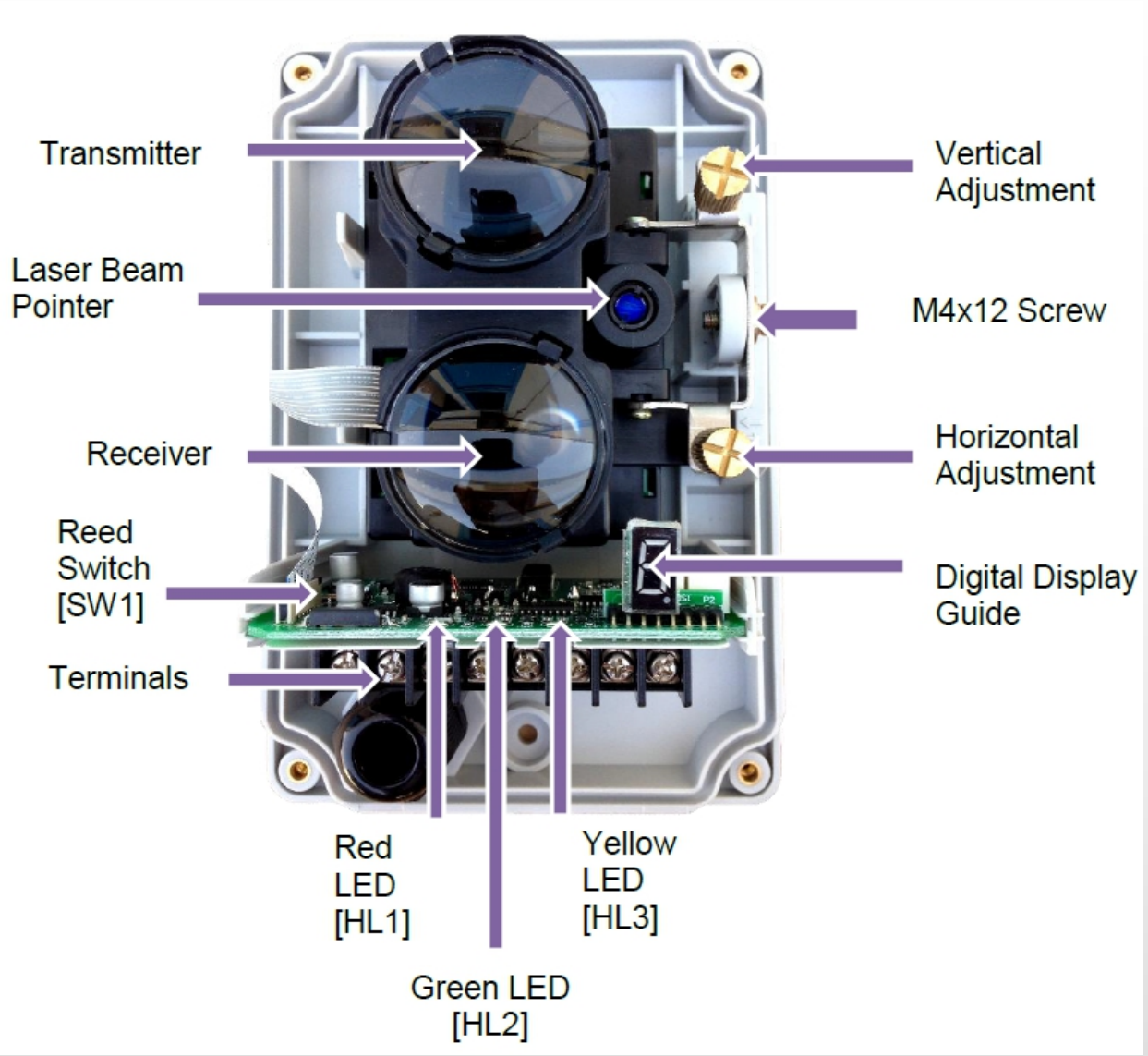
# ATTENTION- PROGRAMMING BY DIP Switch

When programming by dip switch, please short-circuit the terminal of D1 and S1， D2 and S2



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Commissioning Beam Detector



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Commissioning Preparation

1. Make sure both beam detector and reflective mirror are properly and securely mounted

2. Make sure that the line of sight is clear and both beam detector and reflective mirror are in placed with correct axis angle.

3. Make sure that the suitable numbers of reflective mirror are installed depending on the distance between detector and mirror.

4. Make sure required Span settings is adjusted through handheld programmer depending on the distance between the detector and mirror. [Span1:8-20meters; Span2:20-40meters, Span3:40-70meters, Span4:70-100meters]

5. Wiring should be done correctly

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Step 1: Entering Commissioning Method

a. Remove the detector cover and power on the device.

b. Place the supplied magnetic tool alongside the Reed Switch [SW1]. After a while the Green LED [HL2] should be on steady or blinking, then take out the magnetic tool to start the detector auto alignment process

**Note: Keep the line of sight clear between the detector and mirror. Do not disturb the detector auto alignment process**

## Step 2: Sightline Alignment Procedure

a. The Laser Beam Pointer should turn on automatically. Look through on the reflective mirror to see if the laser beam mark is at the center of the mirror.

b. Once you locate the mark, loosen the M4x12 screw and adjust the horizontal or vertical adjustment wheel until the Laser beam mark at the center of the mirror. Refer to figure 8.

**Note: During the adjustment period the digital display guide indicates number- it is not indicating the signal intensity. If the number is turned to zero [0] it means the Sightline Adjustment is not appropriate and more adjustment is required.**

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Step 3: Acceptable Adjustment Procedure

a. Adjust the signal intensity through the horizontal or vertical adjustment wheel while the detector is monitoring signal intensity through digital display guide, the number is indicating the signal intensity form 1 to 8. Try to reach number eight [8] to have an acceptable adjustment. Make sure that the line of sight is clear between the detector a mirror.

b. If Green LED [HL2] is steady on, it means that the signal intensity is acceptable

c. Tighten M4x12 Screw, and then ready to proceed to the next step.

**Note: If number nine [9] is displayed, it means the setting of the Span is not appropriate. In this case, power off t detector and re-program the appropriate distance between the detector and mirror through programmer**.

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Step 4: Finalizing Installation

a. Insert the detector cover and screw the 4 sides of the detector.

b. Place the magnetic tool alongside the “(D)” marked.

c. Right after the Green LED [HL2] is off, take out the magnetic tool to allow the detector to exit from commissioning mode and turn to monitoring mode.

**Warning**:
**Do not obstruct or interrupt the signal between the detector and mirror.**

**Note:**
**The Yellow LED [Fault] and Green LED [Alignment] will begin blinking simultaneously for about 3 seconds and then Red LED [Fire] will begin blinking every 3 seconds, which indicates that the beam detector is commissioned successfully.**
**Keep the detector running for at least 20 seconds then proceed to the next step.**

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Step 5: Testing Fire Signal

a. Using supplied Opaque/Translucent materials, block the entire beam detector with the translucent portion of the material. With less than 30 seconds the Red LED [Fire] will turn on steady, indicating Fire signal. [The fire alarm relay [HJ1 and HJ2 will latch to normally close]. Refer to Figure 9.

b. Remove the testing material and cut the power off for at least 2 seconds to reset the detector.

# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

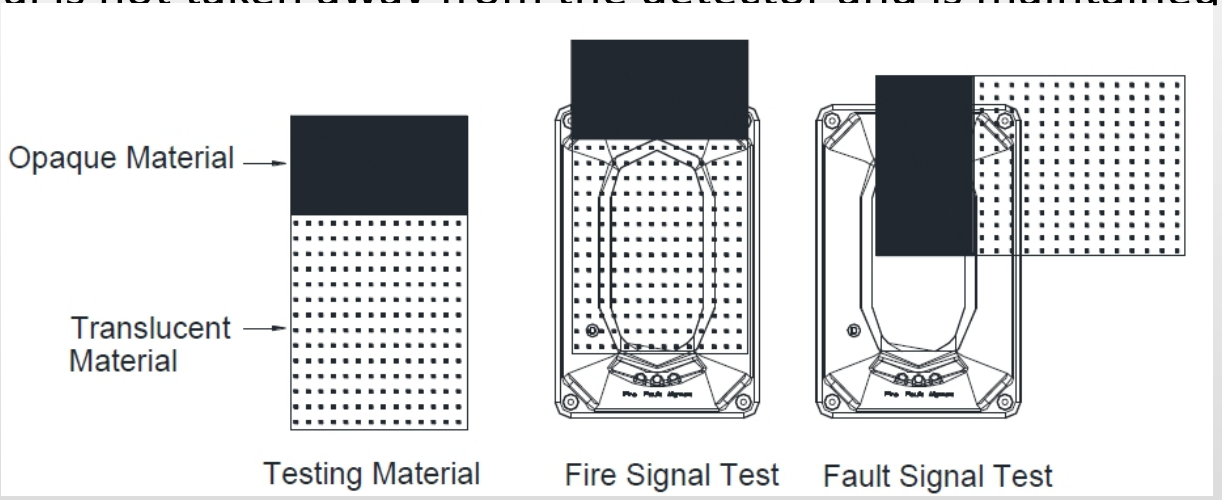
## Step 6: Testing Fault Signal

a. Using supplied Opaque/Translucent materials, block the half of the beam using the opaque portion of the material. Right after the Yellow LED [Fault] turns on, indicating the fault signal. [The fault alarm relay GZ1 and GZ2] will latch to normally close]. Refer to Figure 9.

Note:

1. If the opaque material is taken away from the detector in less than 15 seconds, then the detector automatically reset to normal status.

2. If the opaque material is not taken away from the detector and is maintained for more than 15 seconds, then a fire sig seconds to reset the detector.



# **Infrared Linear Reflex Beam Smoke Detector** - Model: AW-BK901.

## Problems you may meed

| Trouble | Comments | Troubleshooting Advice |
|---|---|---|
| Indicates Faults after commissioning | The detector is Dirty<br>The line of sight between detector and mirror was moved<br>Not properly commission at the start | Conduct maintenance<br>Re-commission the detector |
| Unable to commission | Transmit/Receive diode is not working<br>The reed switch is damaged | Replace the component |
| Keep Indicating Fire signal | Check if vibration or electro-statistic discharge is preset after commissioned | Re-commission the detector |
| Fire signal can't be cleared | There are obscuration on the optical pathway between the detector and the reflector.<br>The angle of optical pathway has changed and need to be aligned again. | Re-commission the detector |

# Explosion-Proof Flame Detector


AW-FD701E-UV
Explosion-proof ultraviolet flame detector




AW-FD702E-IR2
Explosion-proof infrared flame detector

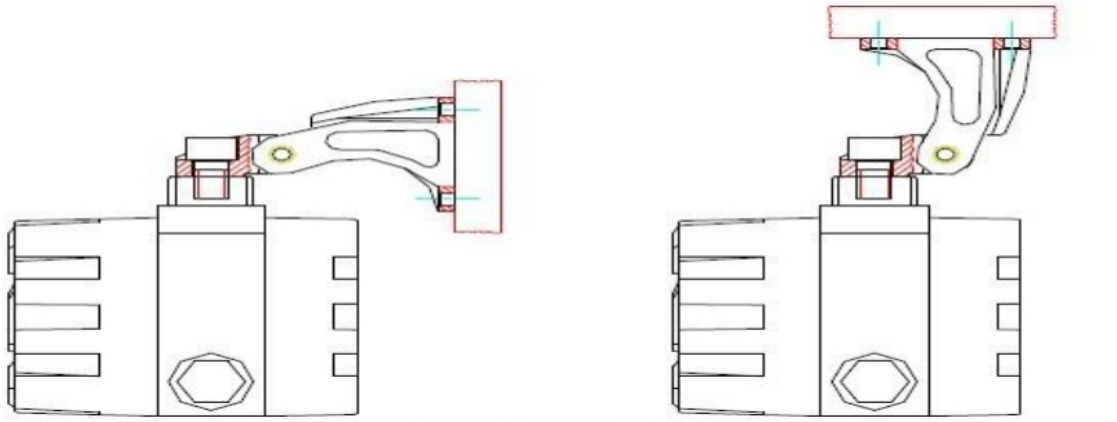

AW-FD703E-UVIR2 Explosion-proof ultraviolet & infrared combined flame detector

AW-FD704E-IR3
Explosion-proof Three infrared flame detector

# Explosion-Proof Flame Detector

## Features

- using a specially designed narrow-band IR sensor pieces and solar blind type UV sensor pieces;
- can be set up *5 sensitivity level,* can meet the different needs of more occasions.
- suitable for the hazardous locations of industrial site.
- Detection Angle *of 120 degrees*.
- Detection range up to 60 meters (AW-FD702E-IR2).
- Suitable for heavy industrial applications.
- suitable for a variety of fuel.

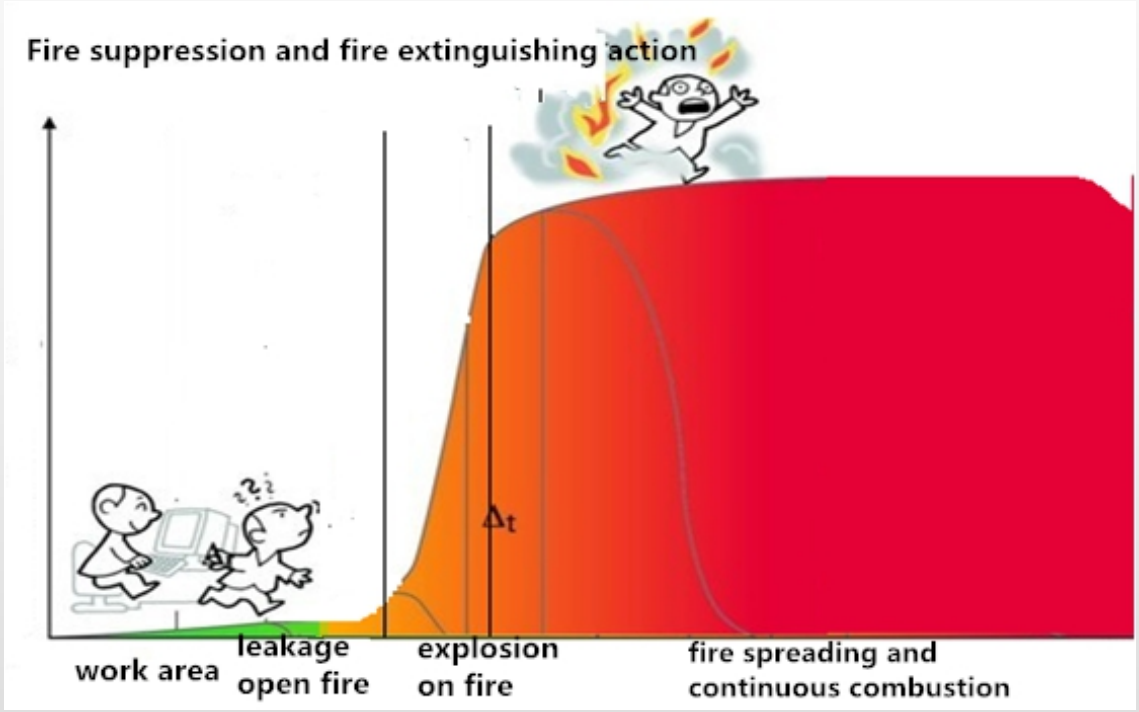


# Explosion-Proof Flame Detector

## 1.Product knowledge

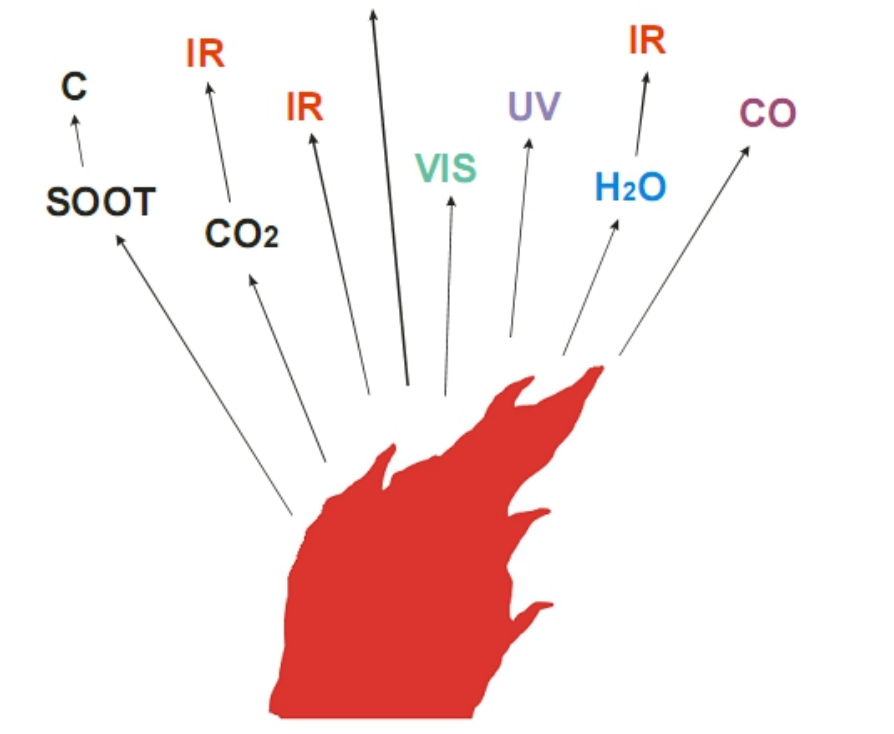
（1）Fire forming process ------industrial fire


Industrial site fire Stage



# Explosion-Proof Flame Detector

## ( 2 ) Chemical distribution of fire



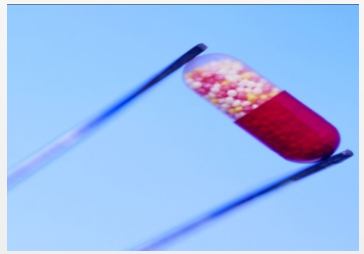
# Explosion-Proof Flame Detector

## Industrial Applications

- Oil
- Chemical
- Military industry
- Coal
- Gunpowder
- Electricity
- Metallurgy
- Tunnel
- Automobile making
- Wine
- Oil paint
- Road transport
- Vessel
- Rubber
- Storage
- Pharmacy
- Food









# Explosion-Proof Flame Detector

## Product sensitivity

UV Flame Detector： Total 5 levels of sensitivity, Level 1 to 5 progressively slower, Level 1 is the fastest response time, Level 5 is the slowest, the factory default is level 3.

IR2 Flame Detector： Total 3 levels of sensitivity, Level 1 to 3 gradually slow down, Level 1 is the fastest response time, Level 3 is the slowest, the factory default is level 3.

IR3 Flame Detector： Total 3 levels of sensitivity, Level 1 to 3 gradually slow down, Level 1 is the fastest response time, Level 3 is the slowest, the factory default is level 3.

UV/IR2 Flame Detector： Total 6 levels of sensitivity, level 1 to 3 is "and" relationship, slow down step by step, the fastest reaction time is level 1, the slowest is level 3 ; level 4 to 6 is "or" relationship, slow down step by step, fastest response time is level 4 , level 6 is the slowest, the factory default is level 3.

# Explosion-Proof Flame  Detector

**Sensitivity level determination**

Under the normal working condition：the flame detector (indicator is green light, blinking continuously), the indicator light will flash several times in a certain time, means the product has several levels of sensitivity.

**Sensitivity adjustment method**

Adjust the sensitivity through the magnet , under the normal working condition,put the magnet on the upper part of the UV, IR2 indicator or the lower part of the IR3, UV/IR2 indicator.

# Explosion-Proof Flame  Detector

**Product model**

UV, UV/IR2 products can be used to detect infrared radiation and ultraviolet radiation emitted by any burning substance. When there are hydrogen, ammonia, silane, aluminum-magnesium metal and other combustion materials in the site, these combustion materials radiate a small proportion of infrared rays and IR2 and IR3 are not recommended.

UV flame detector range ：15~25m

IR2 flame detector ange ：25~35m

UV/IR2 flame detector range ：25~50m

IR3 flame detector range ：30~50m

For the specific detection distance, Please refer to the technical specifications table

# Explosion-Proof Flame Detector

**Product Categories**

Divided by operating temperature：

Normal type：-10 ° ~55 °

Enhanced type：-40 ° ~70 °

Divided by signal output ：

UV, IR2 with switch output（ relay type ）

IR3, UV/IR2 with switch output (relay type), 4~20mA current output (current loop type)

According to the reset mode ：

Manual power off reset（ factory default ）

Automatic reset（ 10~30s ）

# Explosion-Proof Flame Detector

**Product testing method**

Close-range test：

It is recommended to test by using a lighter. In the normal working state,ignite the lighter or the candle at a distance of 0.3~1.5m.The lighter should be aligned with the detector lens then check the alarm response time and effect.The sensitivity is adjustable with different alarm response time and effect

Remote test：

Remote test is recommended with different ranges,5m, 10m,15m,20m,30m, etc.For ignition plate test,the farther the range ,the larger plate requested. Better to test with 0.3m×0.3m Gasoline fire.If the alarm response time is slow, adjust the sensitivity to a higher degree then test again

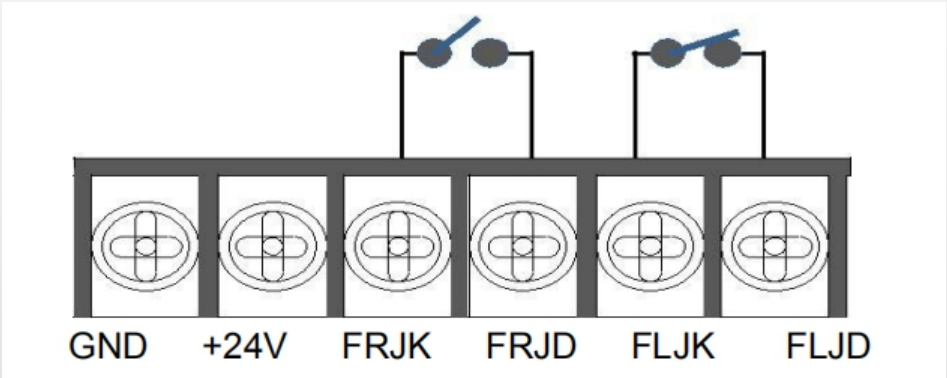
# Explosion-Proof Flame Detector

1.***FLJD and FLJK*** connection detector fault output contacts, when the failure or a power failure occurs or the probe, touch disconnect.

2. ***FRJK and FRJD*** connection fire detector output contract, when the detector alarms, contracts are closed.

3. ***+24V*** external power supply cathode.

4. ***GND*** external power supply negative terminal.



# Conventional Fire Alarm System

Warning: Don't  pull in or out any cable or  board when power is on!

**THANK YOU.**