

QSP-120 **Multi-Loop Suppression System**

Operating Manual

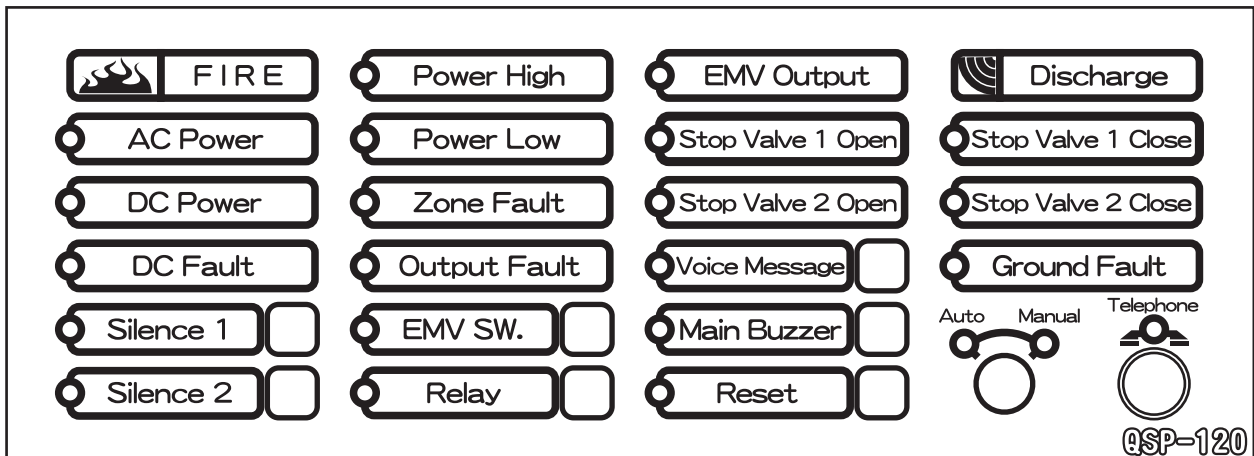


Feature Descriptions

QSP-120 system is suitable for the protection of most hazard and flammable areas such as machine room, parking lot, museum, kitchen or warehouse stored with flammable material. It can detect fire during early stage and then activate the extinguish agent after preset time delay. The voice message feature will activated automatically to assist people evacuated safely. QSP-120 is able to work with all kinds of extinguish equipment (gas, agent, water mist,...etc).

The system is operated by cross-zone detection, with 1st alarm and 2nd alarm confirmation to ensure the fire condition is real. QSP-120 has expandable capacity up to 5 loops and controlled output by either main board or individual zone board. Auto or manual operation selectable for discharge on protection area and monitor the entire system to co-active related facility, simultaneous timer countdown with LED display between panel and manual pull station, The countdown display will warn people how soon the extinguish agent discharged and help people to evacuate efficiently.

Main Board Descriptions



Indicators:

- A. FIRE : Detector is active or the manual pull station door is opened when is ON.
- B. AC Power : AC power is normal when is ON. Switch to DC power when is OFF.
- C. DC Power : Switch to DC power when is ON.
- D. DC Fault : Battery disconnected when is ON.
- E. Silence 1 : Output normal when is OFF \ silence when is steady ON.
- F. Silence 2 : Output normal when is OFF \ output stop when is steady ON.
- G. Power High : When the input power is excess 20% on nominal voltage the LED will lit.
- H. Power Low : When the input power is less 20% on nominal voltage the LED will lit.
- I. Zone Fault : Any fault on zone will lit the LED.
- J. Output Fault : Any fault on output will lit the LED.
- K. EMV SW. : Electro-magnetic output normal when is OFF \ output stop when is steady ON and the buzzer will sound.
- L. Relay : Relay output normal when is OFF \ output stop when is steady ON and the buzzer will sound.
- M. EMV Output : Timer countdown to zero and output activated when is ON.
- N. Stop Valve Open 1 : Valve in open condition when is ON in green and the buzzer will sound.
- O. Stop Valve Close 1 : Valve in close condition when is ON in red and the buzzer will sound.
- P. Stop Valve Open 2 : Valve in open condition when is ON in green and the buzzer will sound.
- Q. Stop Valve Close 2 : Valve in close condition when is ON in red and the buzzer will sound.
- R. Voice message : The LED is OFF when normal output, LED is ON when voice message is OFF.(optional)
- S. Main Buzzer : The LED will lit when press it to silence the panel buzzer temporarily, press more than 3 seconds for a long-term mute and LED flashes. Press it again to return to normal status and LED will go off.
- T. Reset : Panel in resetting when is ON \ to normal condition when is OFF.
- U. Discharge : Extinguishing agent releasing when is ON.
- V. Auto : Switch to auto mode when is ON.
- W. Manual : Switch to manual mode when is ON.
- X. Ground Fault : External line to ground when is ON.

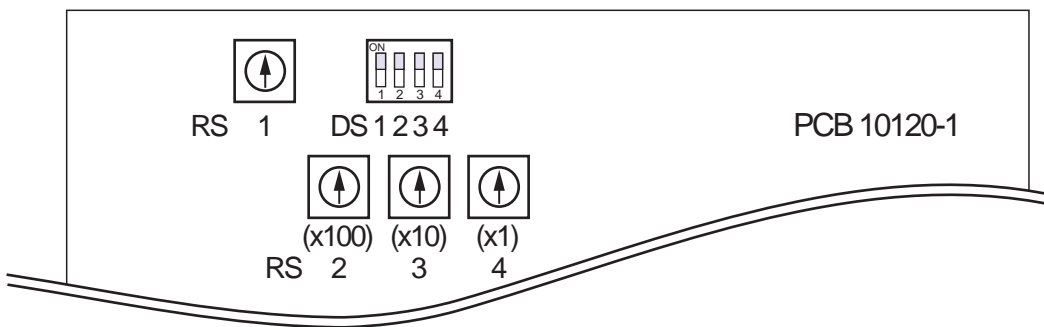
Main Board Descriptions

Switches:

- A. Silence 1 : Turn OFF all sounder outputs.
- B. Silence 2 : Turn OFF all sounder outputs.
- C. EMV SW. : Turn OFF all electromagnetic valve outputs.
- D. Relay : Turn OFF relay output.
- E. Voice message : Turn OFF voice output.
- F. Main Buzzer : To mute the panel alarm sound.
- G. Reset : System reset to normal.
- H. Auto / Manual key switch : Turn the key switch on the control panel, all zones will be changed over to the required mode at the same time.
When manual pull station shift to Manual mode, it will not changed by panel and must go to the manual pull station to shift back to Auto mode.
- I. Telephone : Telephone jack.

Internal switch setting:

Located inside the panel



- A. DS1 : Shift to ON for discharge delay timer setting by rotary switch above (up to 999 seconds). Switching up and down to finish the setting.
- B. DS2 : The START/STOP is enable only after MPS door is opened if DS2 shift to ON, the START/STOP is enable at all time if DS2 shift to OFF.
- C. DS3 : The Discharge indicator will display after pressure switch is activated when shift to ON, the Discharge indicator will display without pressure switch activated when shift to OFF.
- D. DS4 : The delay timer will restart from beginning after STOP when shift to ON, the delay timer will continue countdown after STOP when shift to OFF.
- E. Rotary Switch 1 : Select the total loops for the panel ; Setting the delay timer for individual loop with Switch 2 & 3.
- F. Rotary Switch 2 、 3 、 4 : Select the timer for Single or Tens or Hundreds digits.
- G. Loop Timer Setting : First select the loop number that need to set up on RS1, then switch DS1 to ON, now select the delay time by turning RS2 & RS3 (range 20~999 seconds, minimum 20 seconds). Switch DS1 back to OFF after setting is completed, and you will hear 2 audible sound for confirmation, the delay timer will also show the new timer setting.

* NOTE : Please make sure the number of RS1 are the same as panel's loop number.

Main Board Descriptions

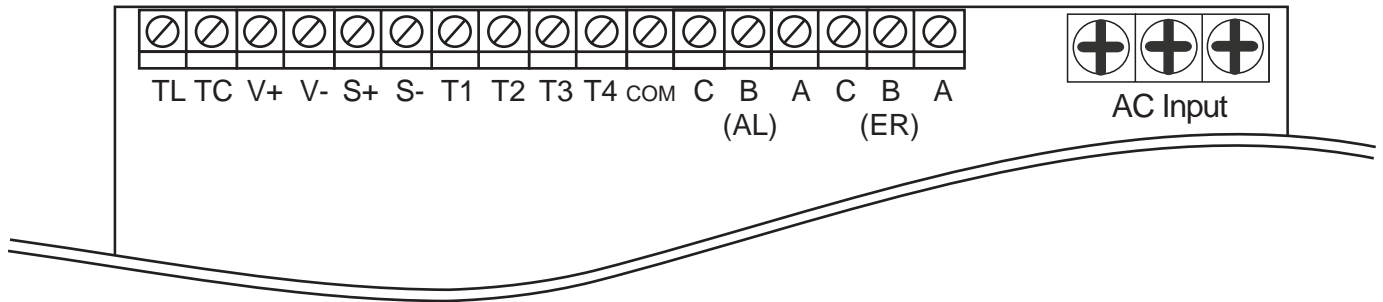
Panel buzzer sounding mode:

Alarm sounds continuously, trouble sounds intermittently.

Phone device:

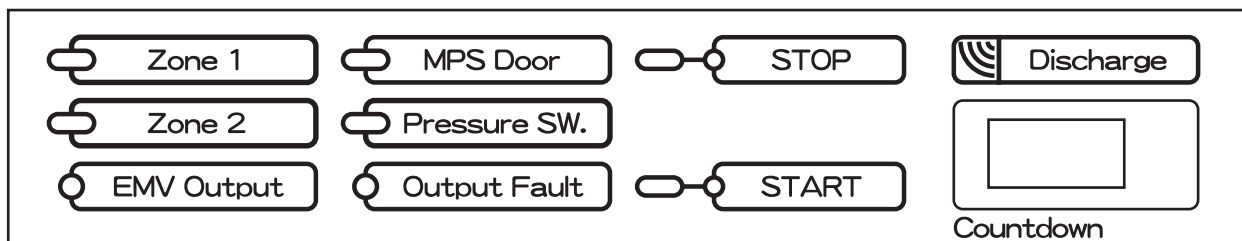
When manual pull station has telephone plug in, the telephone LED will lit and audible warning sound, just plug in the phone to panel and start to communicate.

Power Board Terminals:



- A. TL,TC : Connect to Manual pull station for telephone feature.
- B. V+, V-, S+, S- : Power and signal connection to the manual pull station.
- C. Stop valve (T1~T4) Input : Stop valve 1 OPEN · Stop valve 1 CLOSE · Stop valve 2 OPEN · Stop valve 2 CLOSE · COM.
- D. C, B, A(AL) : Any zone in alarm will generate a voltage-free output.
- E. C, B, A(ER) : Any trouble occurs will generate a voltage-free output.
- F. AC Input : 220V AC power source.

Loop Descriptions



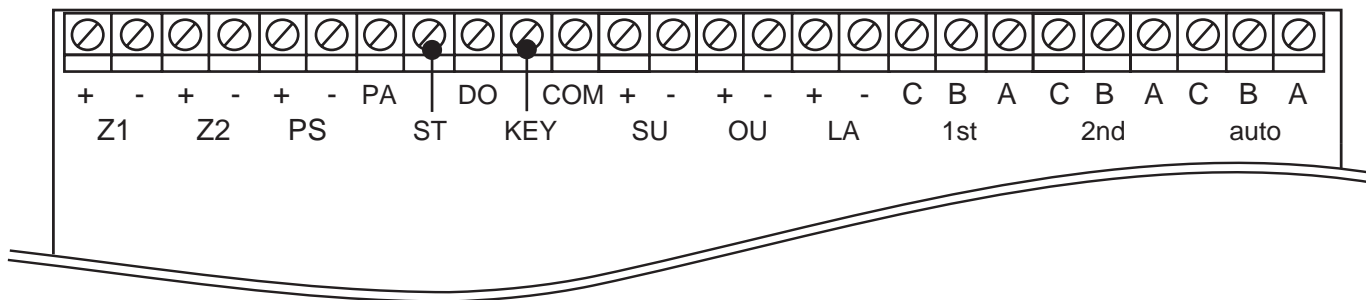
Board Indications:

- A. Zone 1 Alarm LED : LED will lit in RED when any detector in zone 1 is active.
- B. Zone 1 Fault LED : LED will lit in YELLOW when any detector in zone 1 is trouble.
- C. Zone 2 Alarm LED : LED will lit in RED when any detector in zone 2 is active.
- D. Zone 2 Fault LED : LED will lit in YELLOW when any detector in zone 2 is trouble.
- E. EMV Output : LED will lit in RED when timer countdown to zero and generate the output.
- F. MPS Door : The LED will lit in RED when MPS door is opened.
The LED will lit in YELLOW when MPS door is trouble.
- G. Pressure SW. : The LED will lit in RED when Pressure SW is active.
The LED will lit in YELLOW when Pressure SW is trouble.
- H. Output Fault : The LED will lit in RED when any output is trouble.
- I. STOP : The LED will lit in RED when MPS STOP button is pressed.
The LED will lit in YELLOW when STOP loop is trouble.
- J. START : The LED will lit in RED when MPS START button is pressed.
The LED will lit in YELLOW when START loop is trouble.
- K. Discharge : The LED will lit when agent is released.

Delay Timer:

- A. Auto : Timer starts to countdown when both zones in alarm.
- B. Manual : Timer starts to countdown when MPS is active.

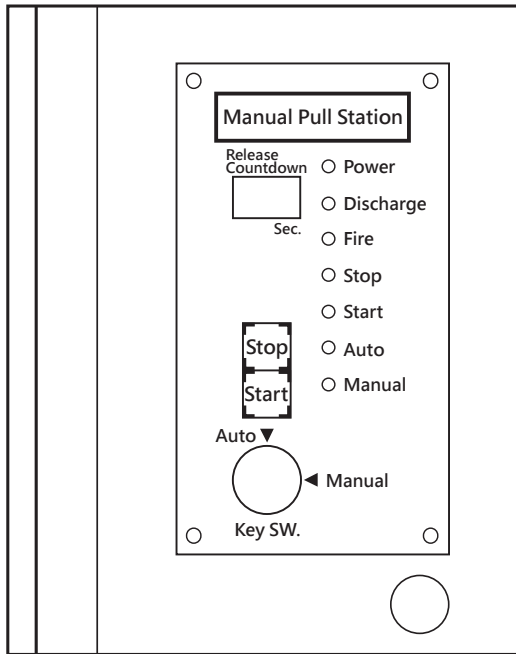
Loop Descriptions



Input / Output Terminals:

- A. Z1 : Detector zone input, need connect EOL resistor 4.7 K Ω .
- B. Z2 : Detector zone input, need connect EOL resistor 4.7 K Ω .
- C. PS : Pressure switch will supervise the agent whether it is normally released, need connect EOL resistor 4.7 K Ω .
- D. PA, ST, DO, KEY, COM : Emergency STOP 、 Emergency START 、 MPS door 、 Manual operation com. PA, ST, DO contacts need connect EOL resistor 4.7 K Ω .
- E. SU : Any zone in alarm will generate 24V DC output to bell.
- F. OU : When timer countdown to zero it will generate 24V DC to active agent device.
- G. LA : When agent start to release it will generate 24V DC to active discharge indicator.
- H. C, B ,A(1st) : Any zone in alarm or MPS door opened will generate relay output.
- I. C ,B ,A(2nd) : Both zones in alarm or MPS is pushed will generate relay output.
- J. C, B ,A(auto) : When Auto / Manual key switch is changed will generate relay output.

Manual Pull Station

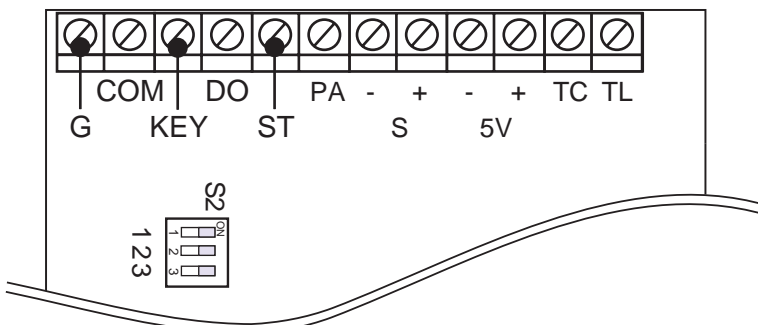


Indicators:

- A. Release Countdown : The timer countdown will showed the same as panel.
- B. Power : It will lit when power supply is normal.
- C. Discharge : It will lit when extinguish agent is released.
- D. Fire : It will lit when any zone at same loop in alarm or MPS door is opened.
- E. STOP : It will lit when emergency STOP is pressed at same loop.
- F. START : It will lit when emergency START is pressed at same loop.
- G. AUTO : It will lit when switch to AUTO mode.
- H. MANUAL : It will lit when switch to MANUAL mode.

Switches:

- A. STOP : Press it to stop the timer countdown.
- B. START : Press it to start the timer countdown.
- C. Auto / Manual : Select operation mode for individual loop.
- D. Door : The loop relay is active when MPS door is opened.



Internal Switch :

Dip switch S2 is used to set up the zone code for the MPS and connected panel (binary code) ON is 1 , OFF is 0.

S2 Zone	1	2	3
1	1	0	0
2	0	1	0
3	1	1	0
4	0	0	1
5	1	0	1

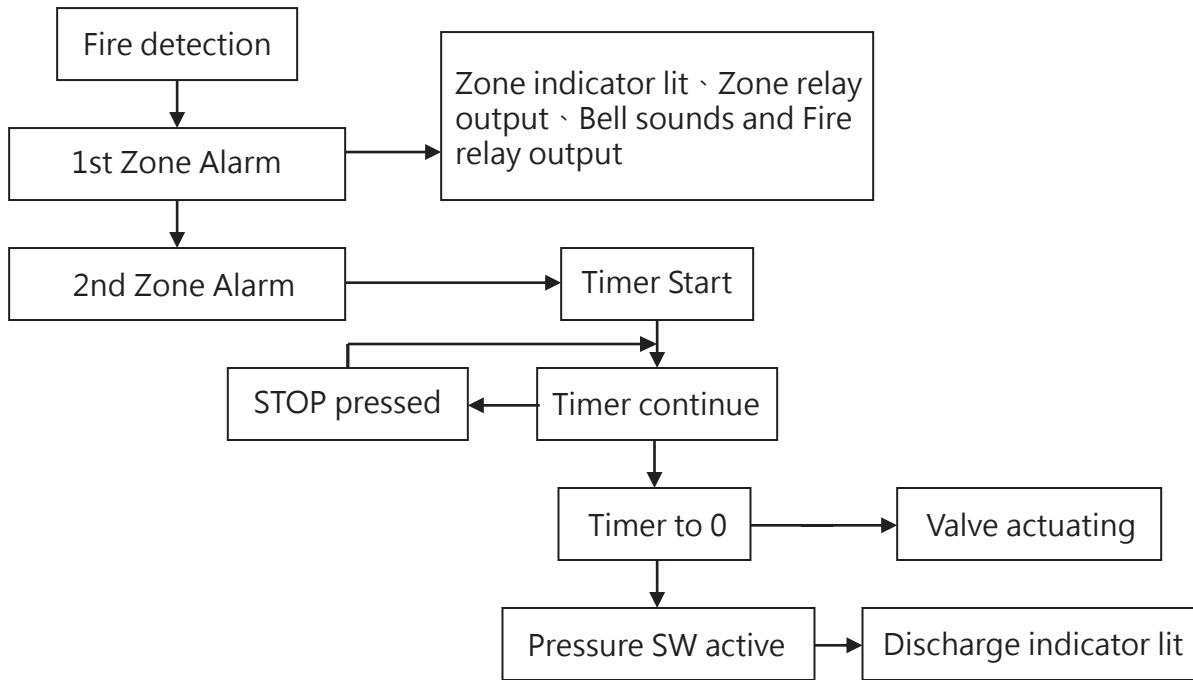
Input / Output Terminals:

- A. TL & TC : For telephone transmission.
- B. +5V- & +S- : For power and signal transmission.
- C. Loop Device : STOP(PA) 、 START(ST) 、 MPS Door(DO) 、 Manual control(KEY) 、 COM.

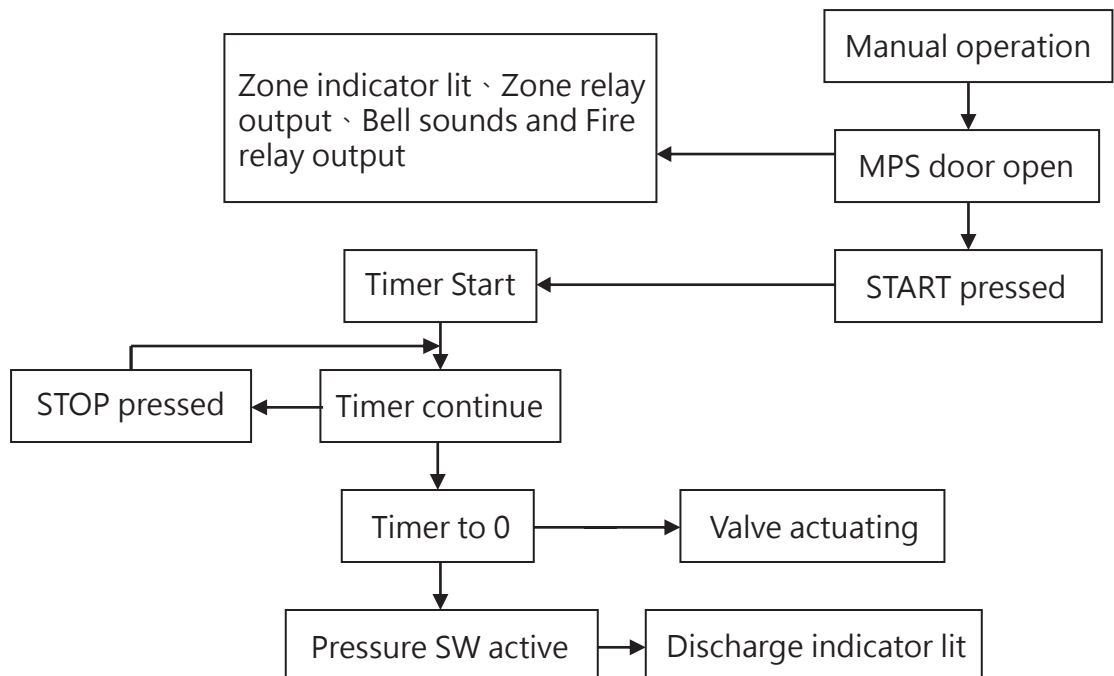
* G(EARTH)

AUTO/MANUAL Mode flow chart

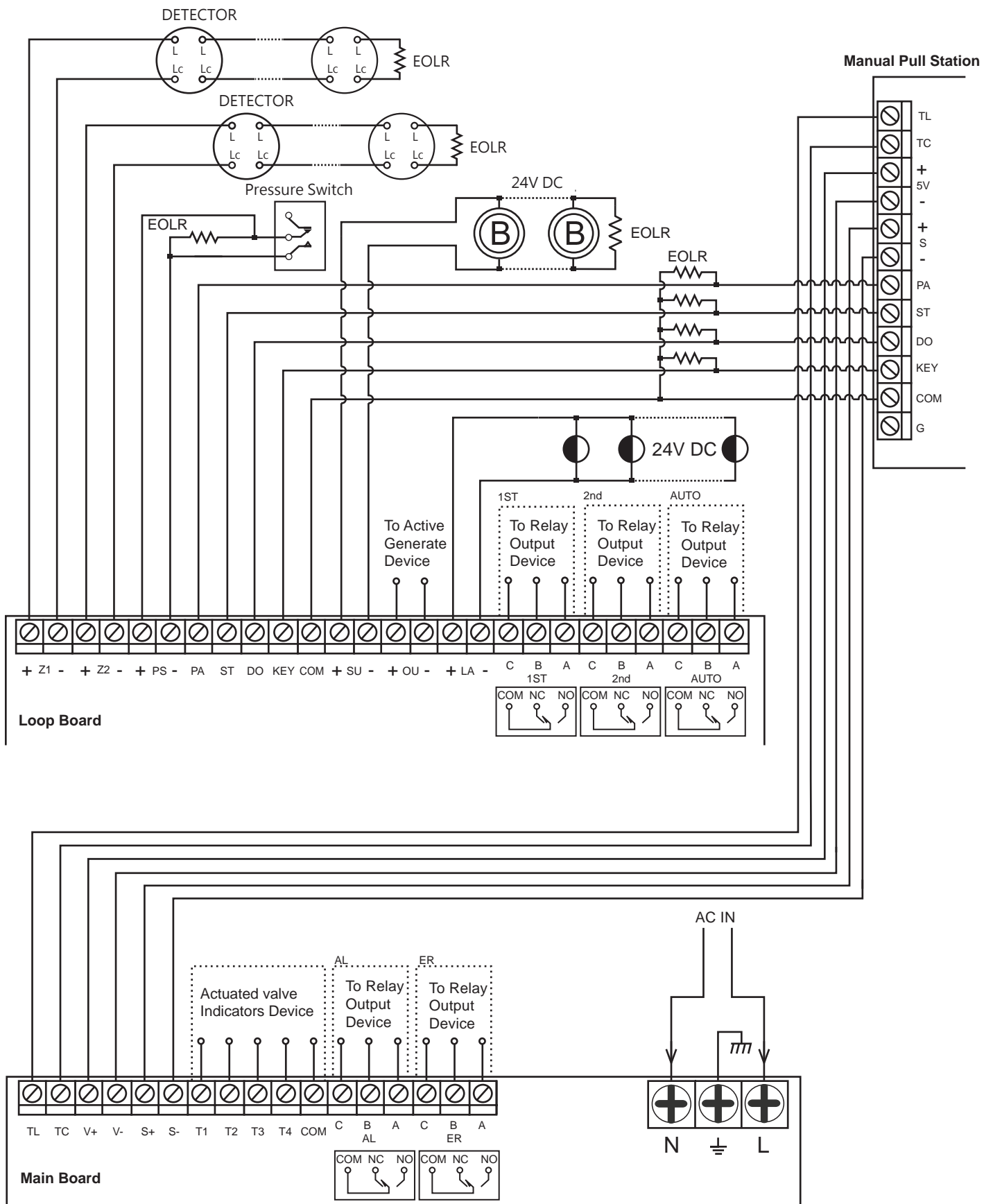
Auto Mode Flow Chart :



Manual Mode Flow Chart :



Wiring Diagram





QSP -120
Multi-Loop Suppression System

HORING LIH INDUSTRIAL CO., LTD.