



Burglar Alarm Manufacturer &
Network Alarm Monitoring System

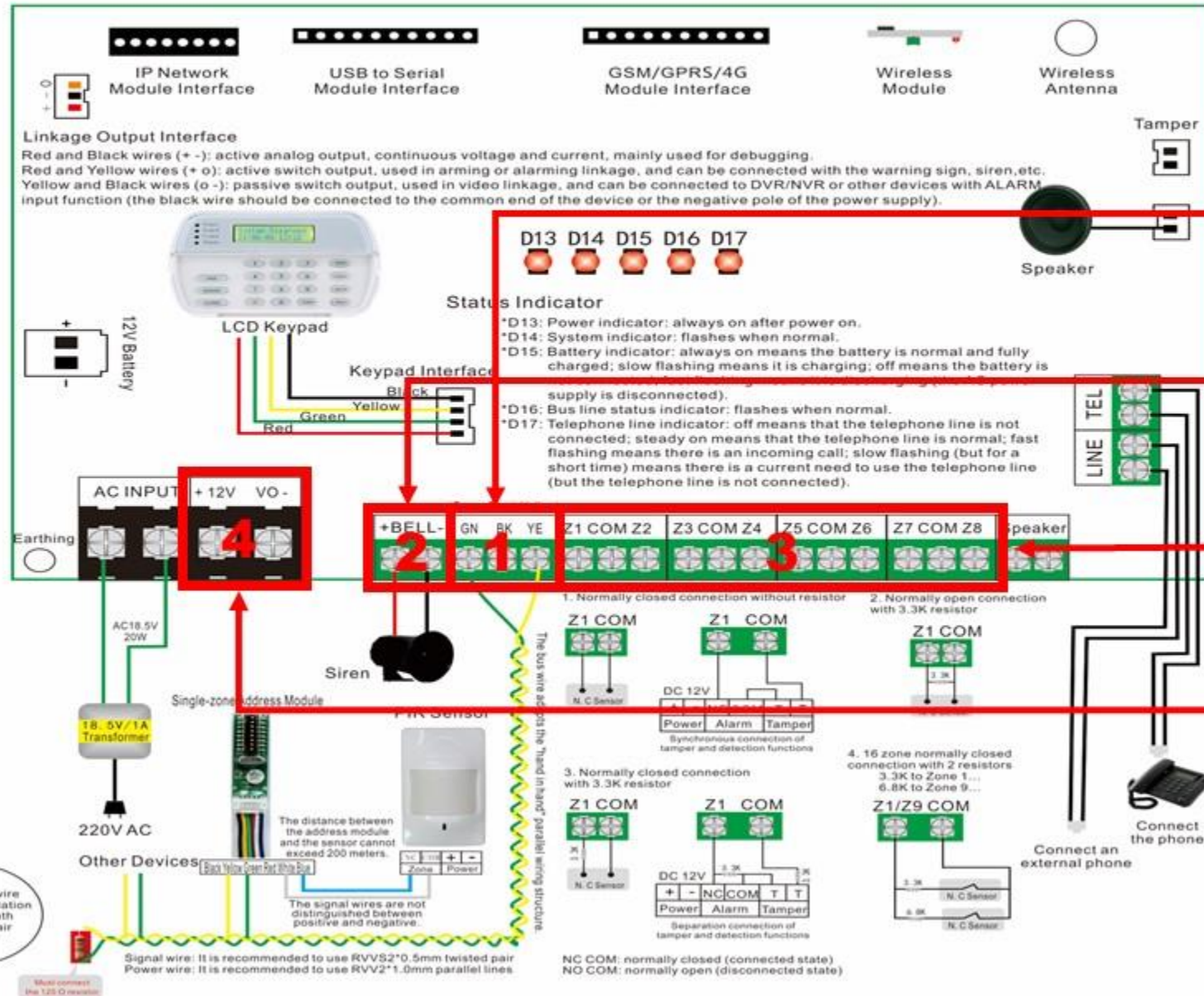


AS-9000 series Alarm Control Panel

Bus Wire Wiring Instruction

Athenalarm Technology Co., Ltd.
<http://www.athenalarm.com>

AS-9000 series Alarm Control Panel Motherboard Guide



1: Bus wire Zone Port

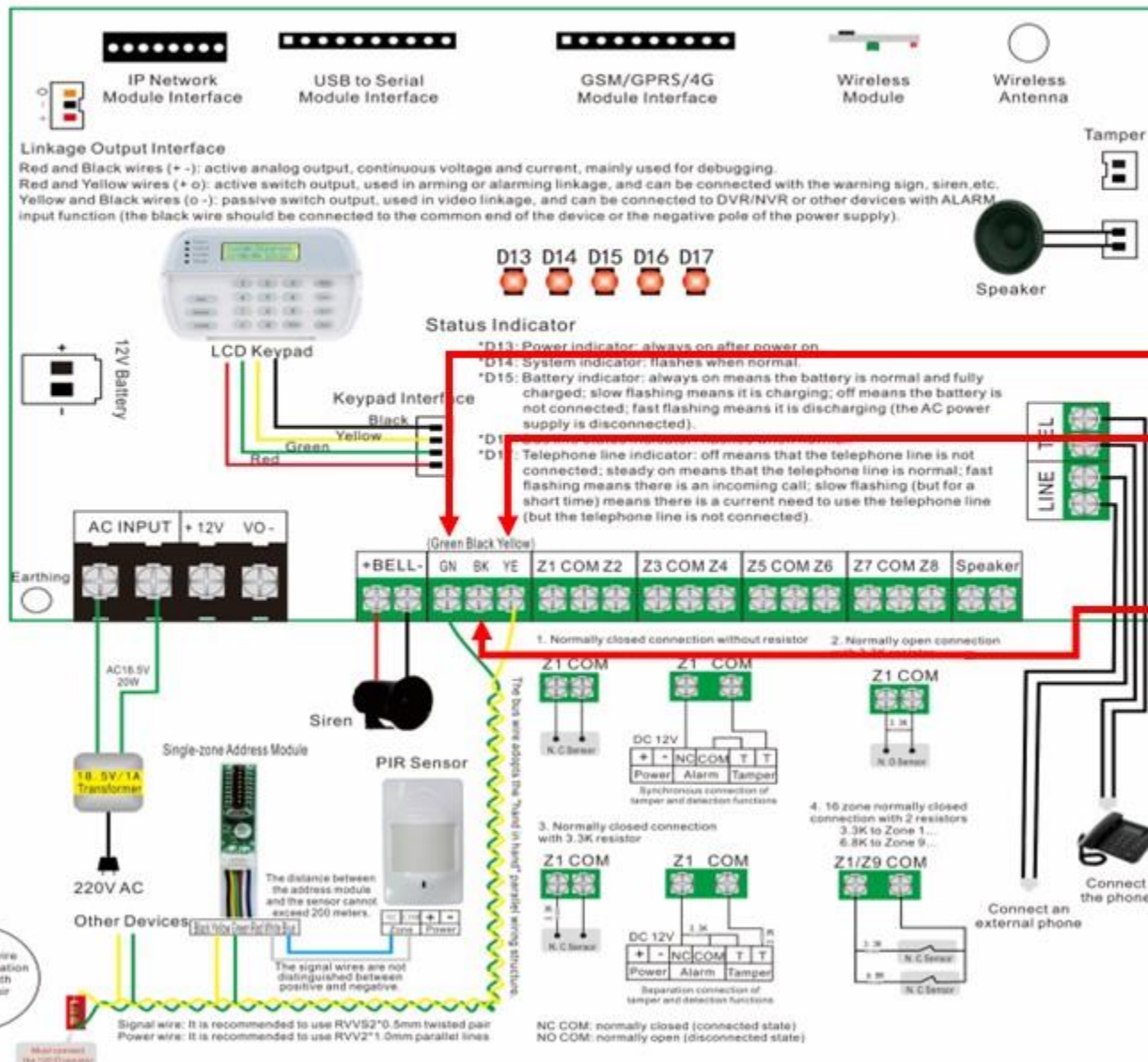
2: Siren Port

3: Sub wire Zone Port

4: DC 12V Power Supply Port

arm

Bus Wire Zone Port



RS485 bus wire: the green and yellow wires are communication wires, and the black wire is the common wire, which is the ground wire shielding layer.

Green wire (+): positive of the communication wire

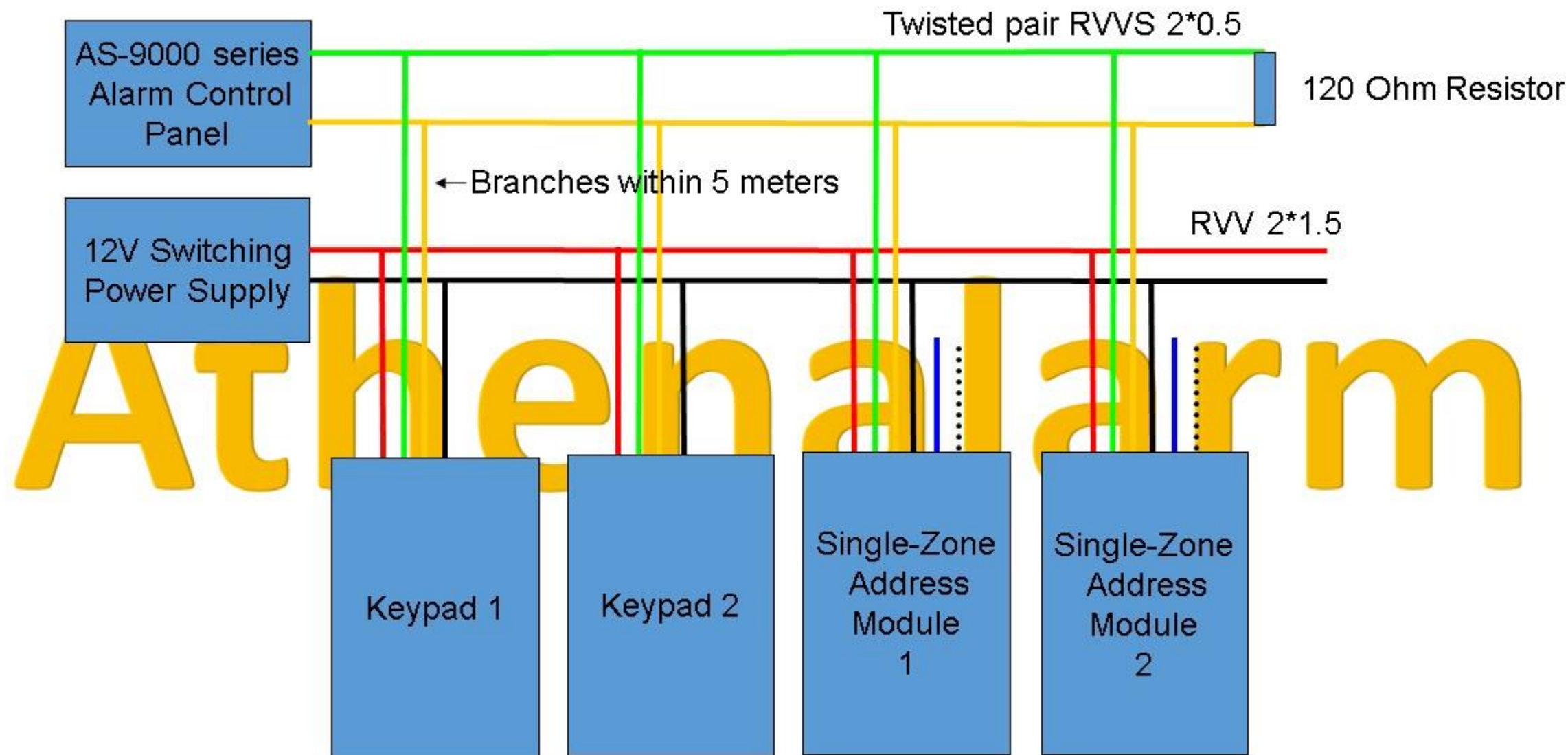
Yellow wire (-): negative of the communication wire

Black wire (COM): grounding is mainly used for

long-distance suppression of interference sources.

If the RS485 devices are connected to the ground, connect the GND (negative) of all RS485 devices.

Bus Wire Wiring Diagram



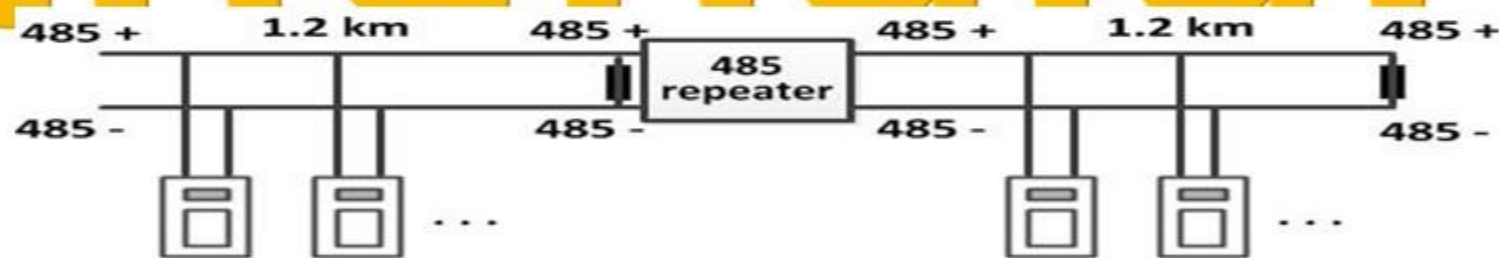
The Single-Zone Address Module, Single-Zone Address & Output Module, 8-Zone Address Module, 8-Zone Linkage Module, Keypad, etc. are connected to the bus wire.

Bus Wire Wiring Requirements

1, AS-9000 series alarm control panel adopts RS485 bus wire, wiring to meet RS485 specifications. The signal wire is recommended the use of twisted pair shielding RVVS 2*0.5, wire impedance 120 ohms is the best. The maximum control distance of single bus is up to 1.2 km. Connect the GND of all 485 devices with the shielding wire. 485 communication using differential mode communication principle, twisted pair of anti-interference is the best. It is extremely wrong not to use twisted-pair wires. (The communication distance of parallel RVV 2*0.5 for the bus wire is about 500 meters in the project.)

2, In the same network system, it must use the same cable, minimize the contact in the wire. Ensure good welding, bandaged tightly for the contact place to avoid loosening and oxidation.

3, Wiring must as far as possible away from high-voltage wire, not parallel with the power wire, do not bundled together with the power wire. (It has 220V power wire and RVVS 2*0.5 signal wire in one tube in the actual project, but it does not mean that is no problem.) 4, When the bus wire length is more than 200 meters, it is recommended to parallel connect a 120 ohm terminal resistor in the last device 485+ and 485-. If the bus wire is more than 1.2 km and it adds repeaters, it should parallel connect a 120 ohm terminal resistor before connecting the repeater, at the end of the device it also should parallel connect a 120 ohm terminal resistor at the repeater outlet direction.

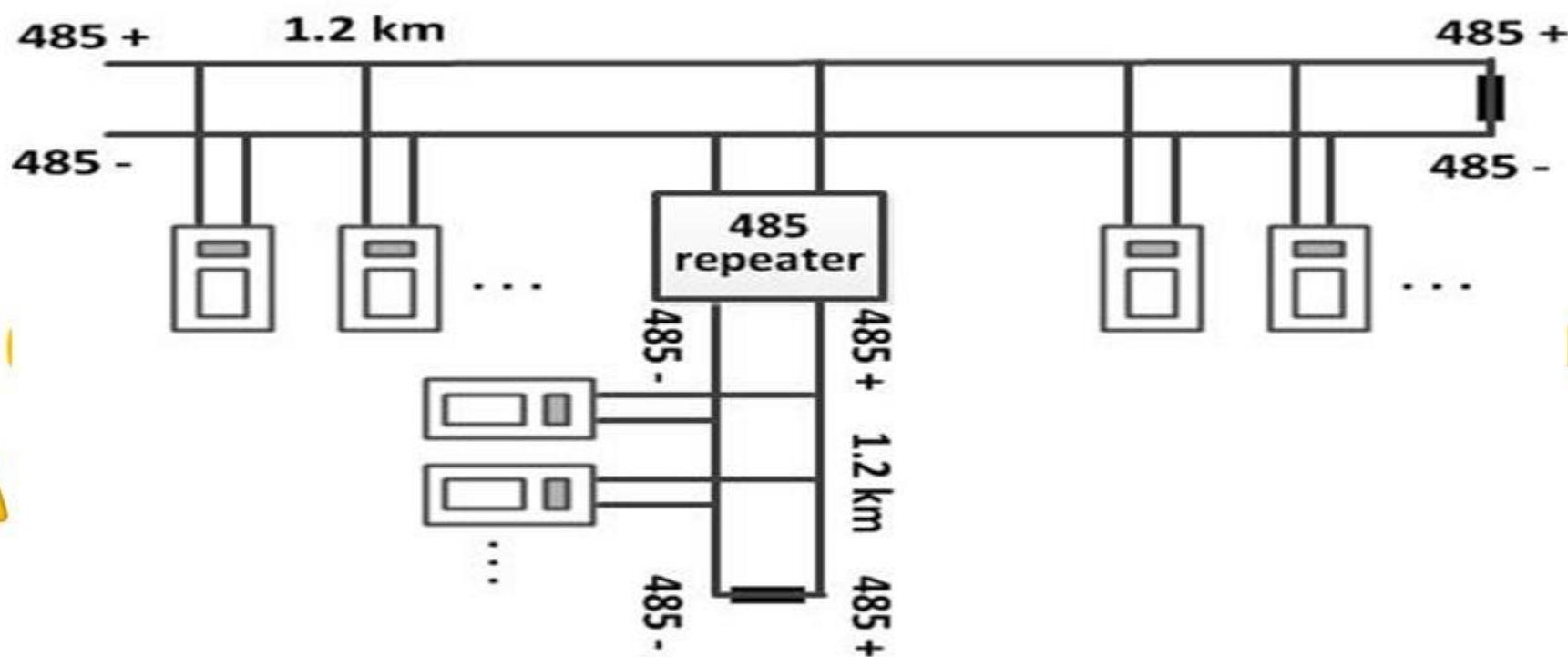


Note: 1, The bus wire can use up to 3 repeaters. If the RS485 devices are connected to the ground, the black wire must be extended by the repeaters.

2, The distance between the address module and the sensor is 200 meters at most.

Bus Wire Wiring Requirements

5, 485 bus wiring must be hand-type bus structure, star-type wiring and fork wiring are forbidden. Otherwise, a repeater must be added at the fork. (the distance between modules within 5 meters does not belong to fork.)

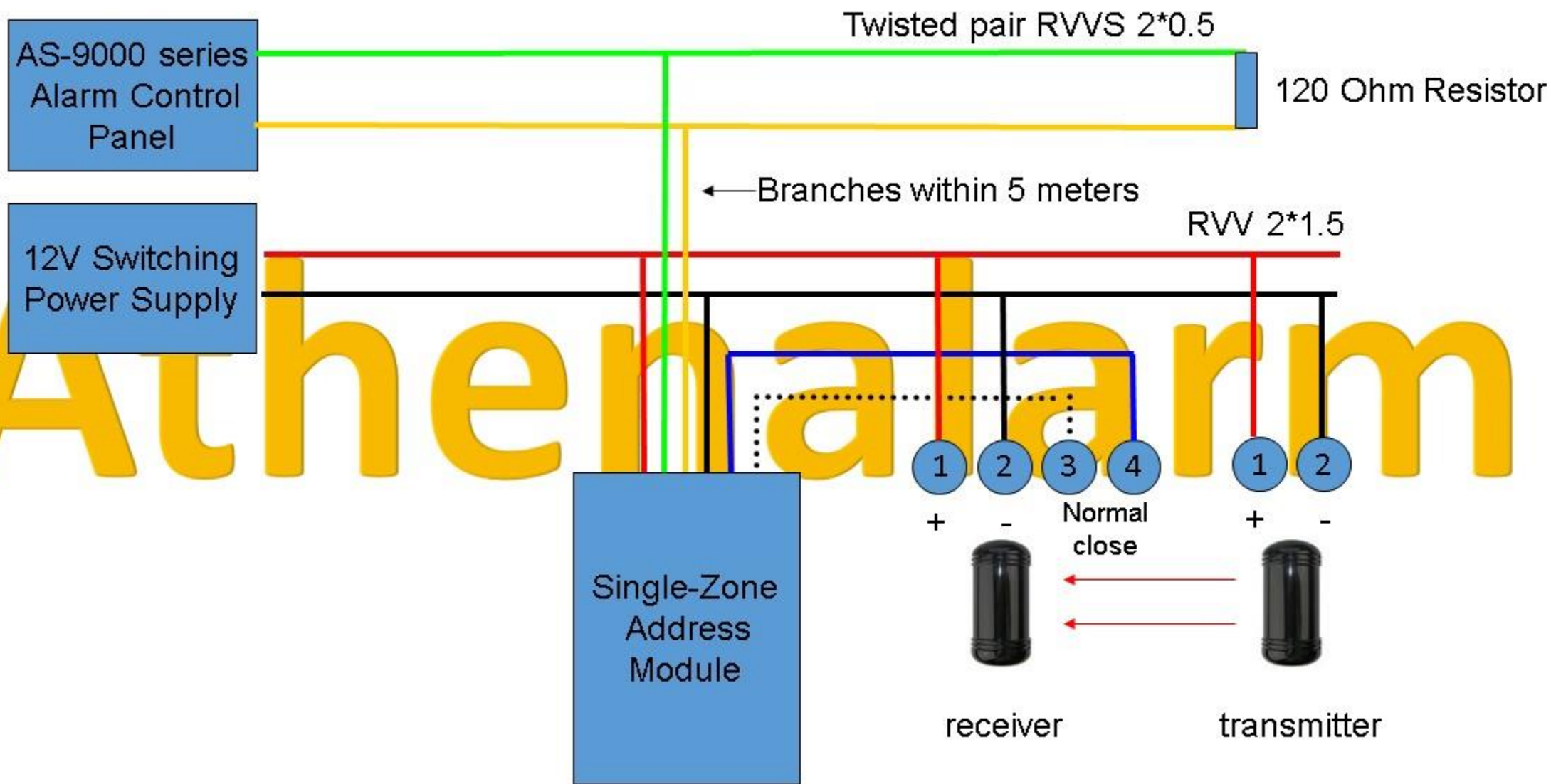


Note: A maximum of 1 repeater can be used by for fork wiring.

6, The power supply can be determined according to the installation site:

- Centralized power supply: the wire must be RVV 2*1.5 at least, the distance should be within 500 meters.
- Onsite power supply: use a 12V2A power adapter for each module.

Single-Zone Address Module Application - infrared beam



Single-Zone Address Module Application – panel setting

1, The module occupies the alarm control panel zone from 100 to 299. The zone number refers to the number displayed at the keypad when the module alarms, and the zone number = address code +100.

Zone Number	Binary Address	Switch Status							
		1	2	3	4	5	6	7	8
100	0								
101	1	●							
102	2		●						
103	3	●	●						
104	4			●					
105	5	●		●					
106	6		●	●					
107	7	●	●	●					
108	8				●				
109	9	●			●				
110	10		●		●				

2, **Smart search** After connecting the wire, log on the keypad and enter the "device management \ search bus device" menu, the alarm control panel will automatically search bus expansion module and establish a connection, and finally it will show how many devices found. When increase, decrease, replace the module, user need to let the alarm control panel search bus expansion module again.

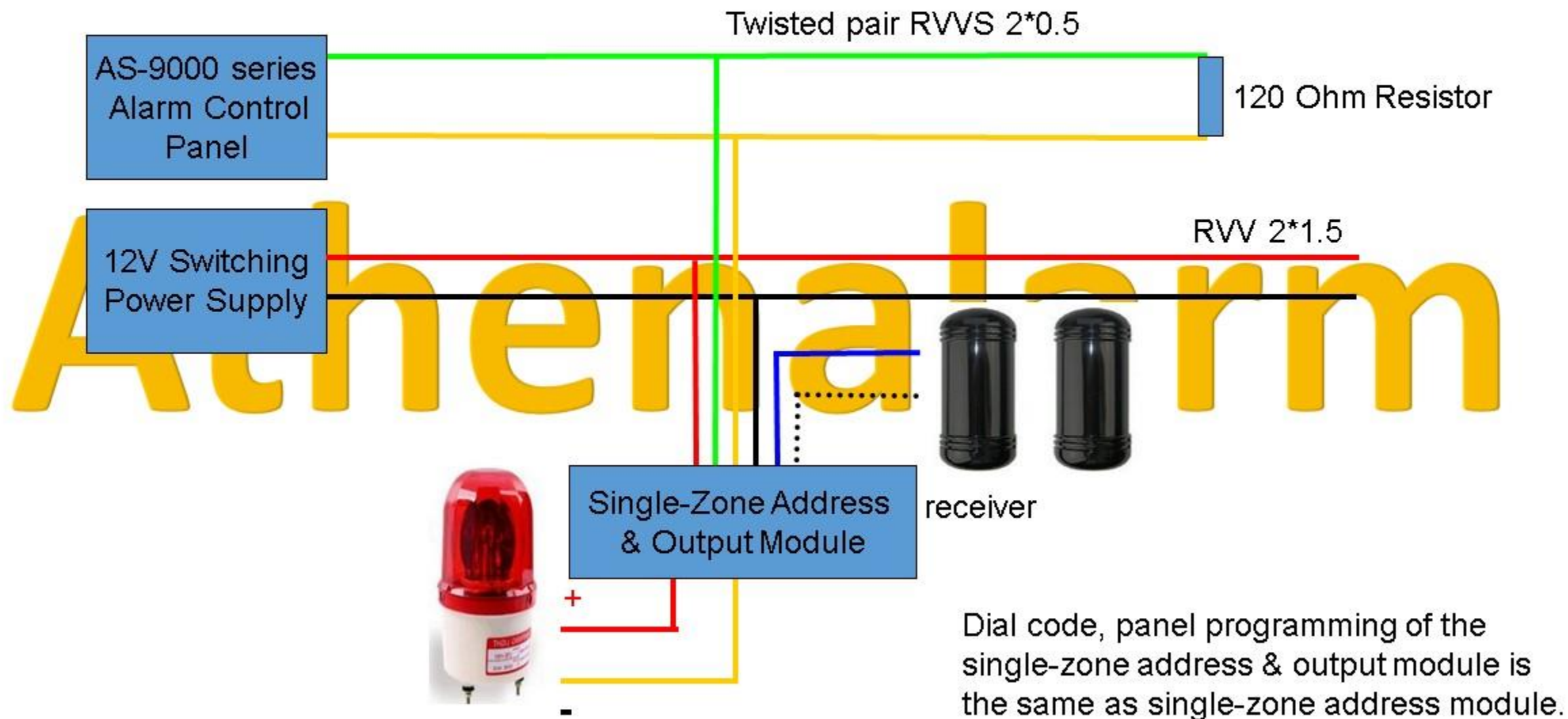
3, **Intelligent identification** (solve missing code, recode problem) Each module has its own unique code number. When the same code is assigned to more than two modules, the alarm control panel will automatically assign the module starting from 399 to the same code module.

4, When the alarm control panel prompts XX zone failure, it indicates that the detector is triggered or the signal wire is wired incorrectly.

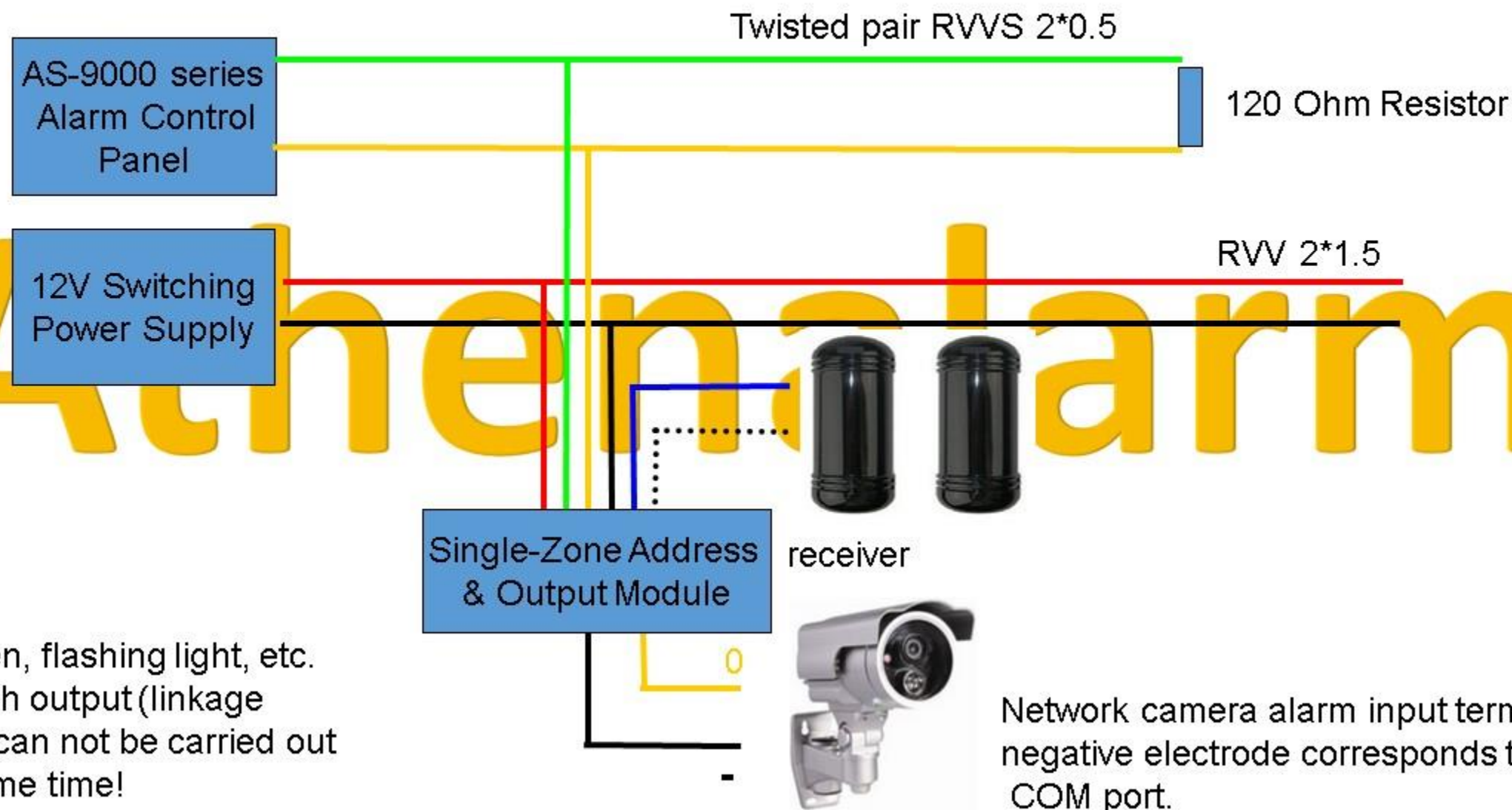
5, On-board 16 wired zones can be turned off directly, if they are not used, choose device management / host settings / Wired zone / Each zone's alarm election prohibition.

Single-Zone Address & Output Module Application

- drive siren, flashing light, etc.



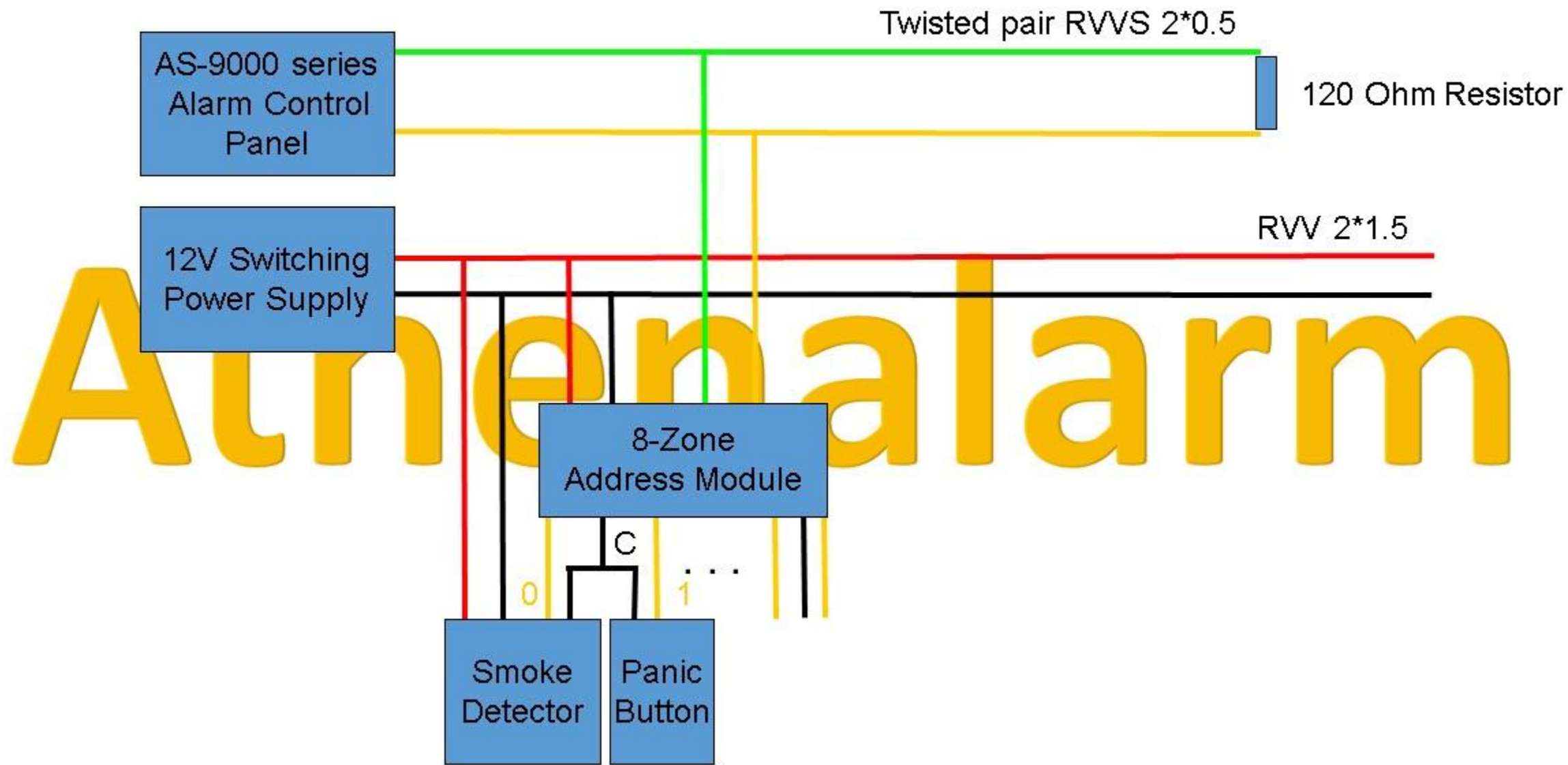
Single-Zone Address & Output Module Application - switch output (linkage camera)



Drive siren, flashing light, etc. and switch output (linkage camera) can not be carried out at the same time!

Network camera alarm input terminal, negative electrode corresponds to the COM port.

8-Zone Address Module Application



8-Zone Address Module Application – panel setting

1, The module occupies the alarm control panel zone from 400 to 1999. The zone number refers to the number displayed at the keypad when the module alarms, and the zone number = address code * 8 + 400.

Zone Number			Binary Address	Switch Status							
				1	2	3	4	5	6	7	8
400	-	407	0								
408	-	415	1	●							
416	-	423	2		●						
424	-	431	3	●	●						
432	-	439	4			●					
440	-	447	5	●		●					
448	-	455	6		●	●					
456	-	463	7	●	●	●					
464	-	471	8				●				
472	-	479	9	●			●				
480	-	487	10		●		●				
488	-	495	11	●	●		●				
496	-	503	12			●	●				
504	-	511	13	●		●	●				
512	-	519	14		●	●	●				
520	-	527	15	●	●	●	●				
528	-	535	16					●			

2, **Smart search** After connecting the wire, log on the keypad and enter the "device management \ search bus device" menu, the alarm control panel will automatically search bus expansion module and establish a connection, and finally it will show how many devices found. When increase, decrease, replace the module, user need to let the alarm control panel search bus expansion module again.

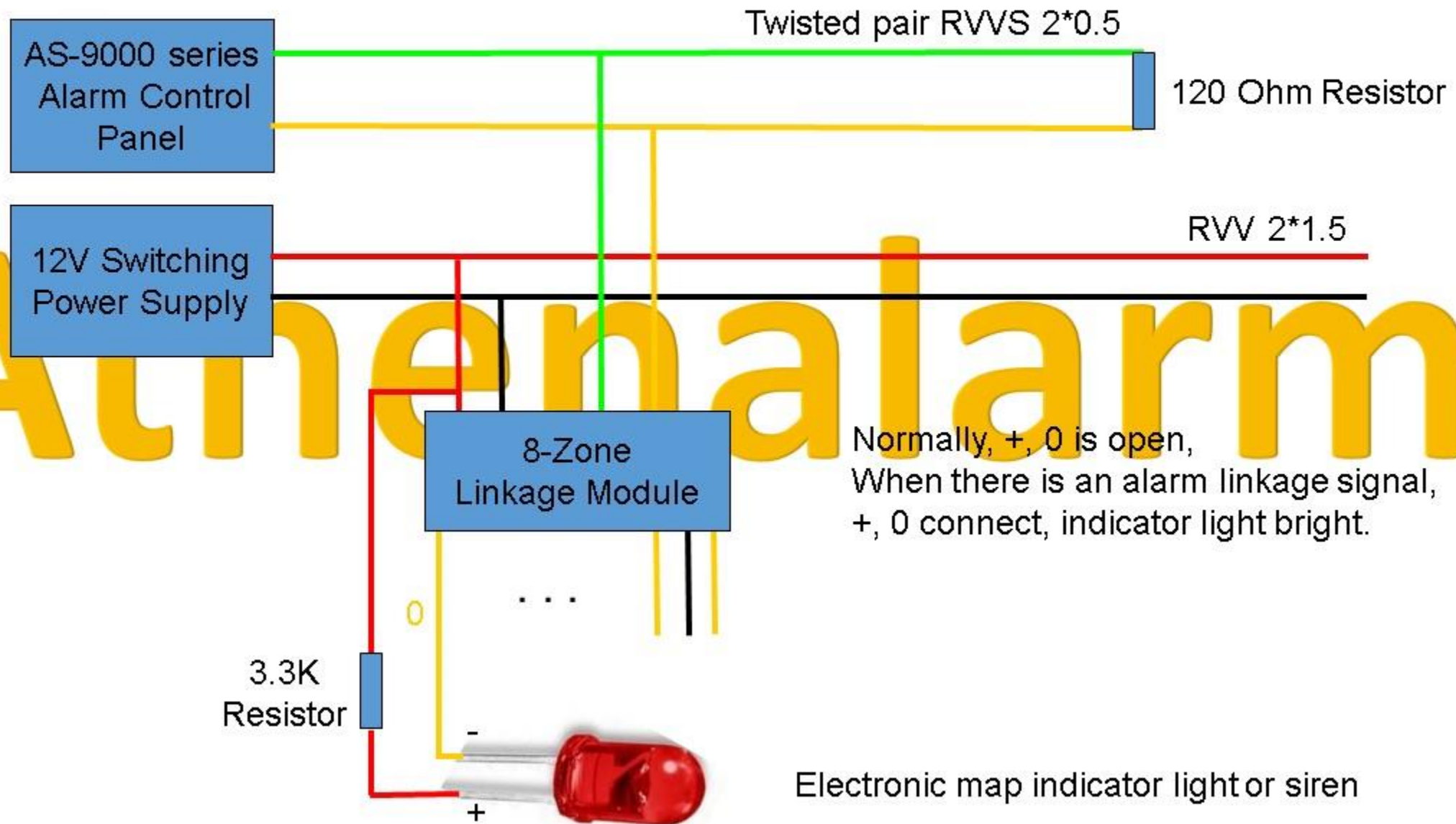
3, **Intelligent identification** (solve missing code, recode problem) Each module has its own unique code number. When the same code is assigned to more than two modules, the alarm control panel will automatically assign the module starting from 1999 to the same code module.

4, When the alarm control panel prompts XX zone failure, it indicates that the detector is triggered or the signal wire is wired incorrectly.

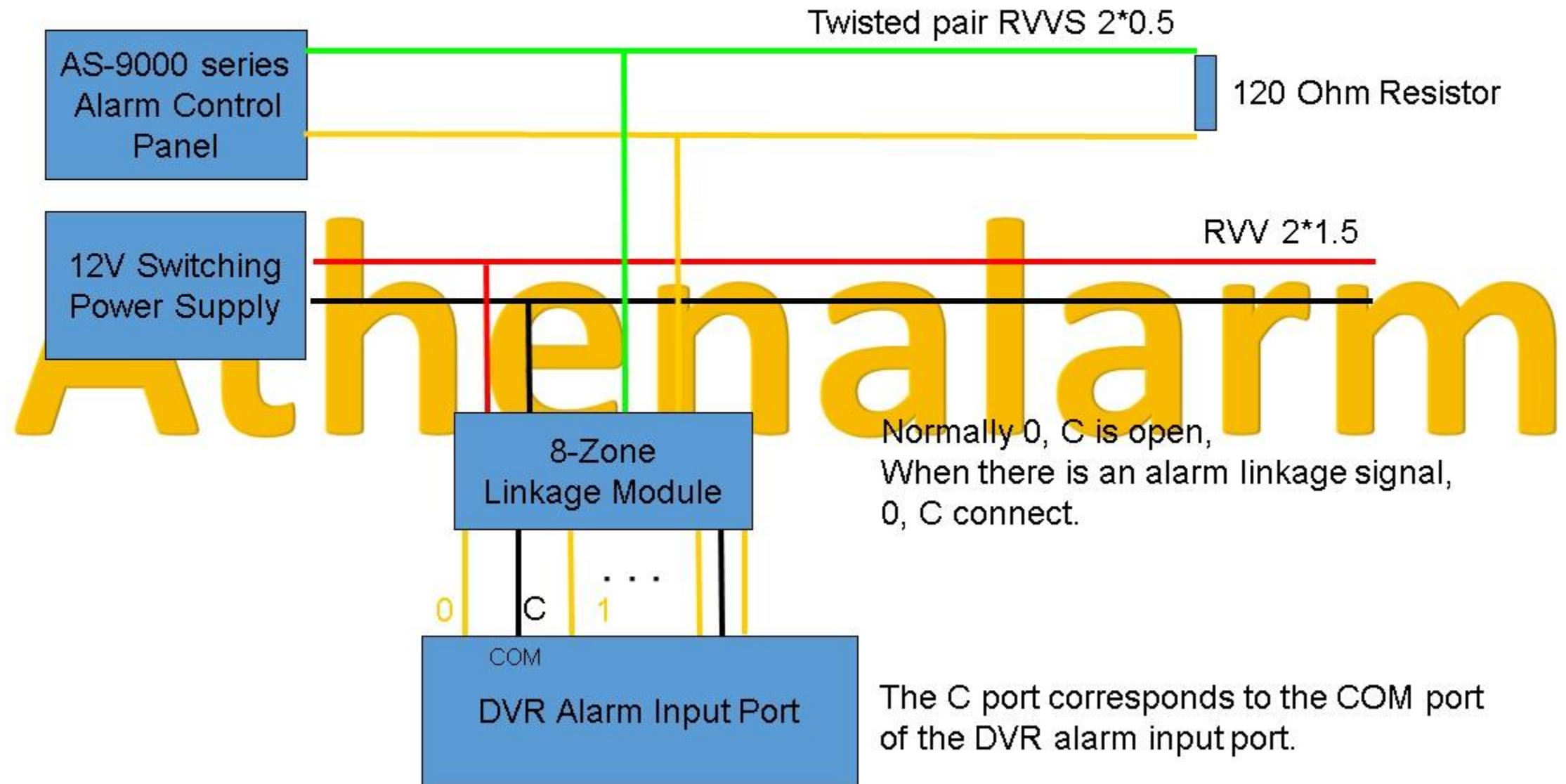
5, On-board 16 wired zones can be turned off directly, if they are not used, choose device management / host settings / Wired zone / Each zone's alarm election prohibition.

8-Zone Linkage Module Application

- voltage output (electronic map or siren)



8-Zone Linkage Module Application – switch output (DVR / alarm receiver)



8-Zone Linkage Module – dial code

1, When on-board 16 zones need linkage in the alarm system, the dialingswitch D1 - D6 on 8-zone linkage module is binary code, D7, D8 is not dialed. (Can be linked to 1 - 16 zone)

Linkage Zone Number			Binary Address	Switch Status							
				1	2	3	4	5	6	7	8
1	-	8									
9	-	16	1	●			●				

2, When single-zone address module needs linkage in the alarm system, the dialingswitch D1 - D6 on the 8-linkage module is binary code, and **the D7 is dialed to on.** (can be linked to 100 - 299 zone)

Linkage Zone Number			Binary Address	Switch Status							
				1	2	3	4	5	6	7	8
100	-	107	0							●	
108	-	115	1	●						●	
116	-	123	2		●					●	
124	-	131	3	●	●					●	
132	-	139	4			●				●	
140	-	147	5	●		●				●	
148	-	155	6		●	●				●	
156	-	163	7	●	●	●				●	
164	-	171	8				●			●	
172	-	179	9	●			●			●	
180	-	187	10		●		●			●	
188	-	195	11	●	●		●			●	

8-Zone Linkage Module – dial code

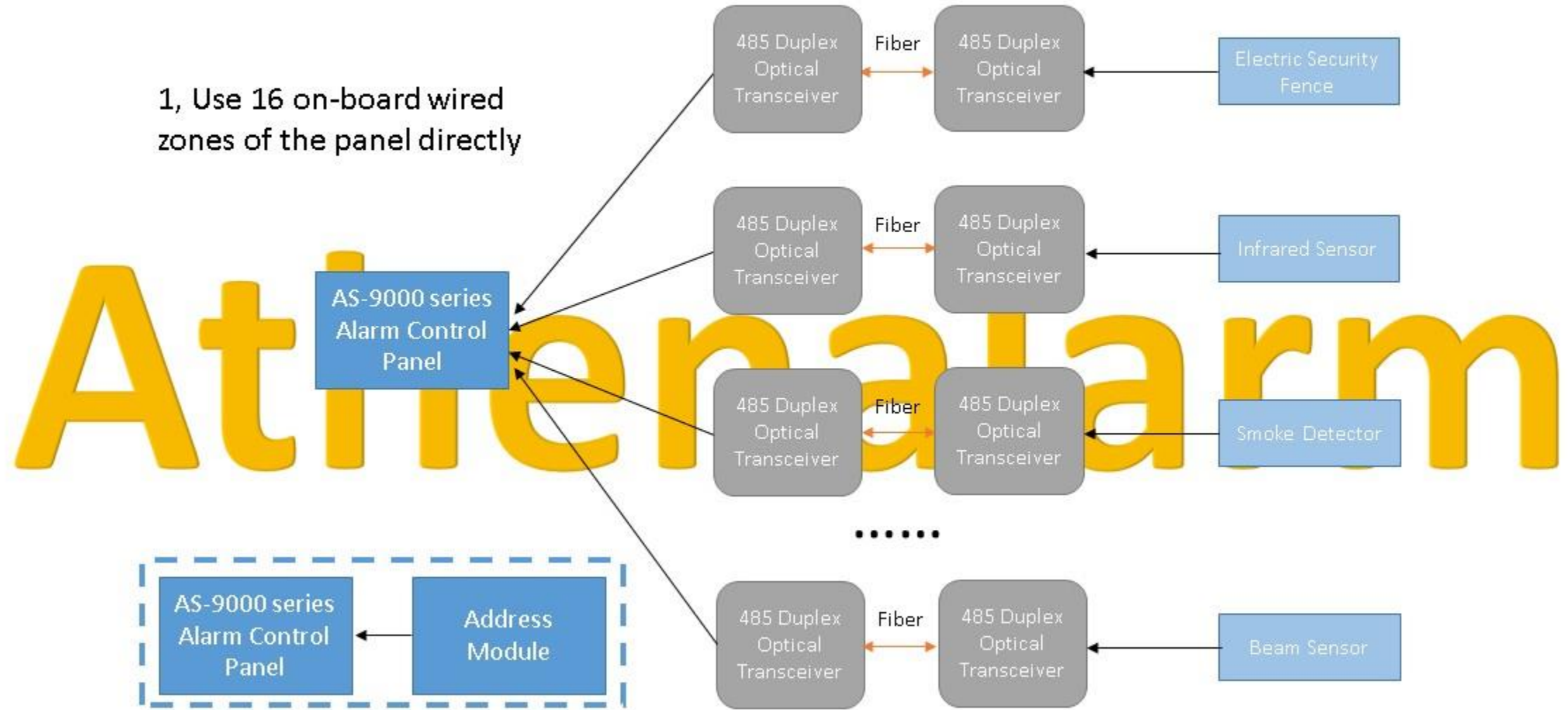
3, When 8-zone address module needs linkage in the alarm system, the dialing switch D1 - D6 on 8-zone linkage module is binary code, and **the D8 is dialed to on**. (Can be linked to 400 - 1167 zone)

Linkage Zone Number			Binary Address	Switch Status							
				1	2	3	4	5	6	7	8
400	-	407	0								●
408	-	415	1	●							●
416	-	423	2		●						●
424	-	431	3	●	●						●
432	-	439	4			●					●
440	-	447	5	●		●					●
448	-	455	6		●	●					●
456	-	463	7	●	●	●					●
464	-	471	8				●				●
472	-	479	9	●			●				●
480	-	487	10		●		●				●
488	-	495	11	●	●		●				●
496	-	503	12			●	●				●
504	-	511	13	●		●	●				●
512	-	519	14		●	●	●				●

Atk alarm

Optical Fiber Wiring (2)

1, Use 16 on-board wired zones of the panel directly



2, When many zones is needed beyond 16 wired zones, the bus wire address modules are installed near the alarm control panel.

Example - Perimeter Alarm System

The bus wire alarm control panel with expansion modules is applied to the perimeter alarm system:

- 1, AS-201 Single-Zone Address Module
- 2, AS-211 Single-Zone Address & Output Module
- 3, AS-208 8-Zone Address Module
- 4, AS-08C 8-Zone Linkage Module



Tips

- The bus wire alarm control panel can connect up to 12 keypads, and 12 passwords can be set (1 super user password, 1 main user password, and 10 user passwords).
- The bus wire capacity can connect up to 256 expansion devices (including single-zone address module, single-zone address & output module, 8-zone addressable module, 8-zone linkage module and keypad).
- Auxiliary power supply output voltage/current: DC12V-15V/1A (long-time overload of 1A current, the power output will be turned off, and will automatically recover after troubleshooting).
- The "black box" (log query) function can store 1500 event records, and can query the zone alarm, arming and disarming information, and battery voltage.
- The bus wire signal and DC current are divided into positive and negative poles, and the zone signal and AC alternating current are not divided into positive and negative poles, but the alternating current is divided into neutral wire and live wire (left: N, neutral wire; right: L, live wire; middle: E, earth wire).
- It is not recommended to connect multiple detectors to the same zone to prevent false alarms from being difficult to troubleshoot.

FAQ

1, The keypad is inoperable.

Processing: if the bus is dismantled, the keypad can be operated normally. It indicate that there is something wrong with the wiring on the bus wire, recheck the wiring.

2, The bus module can not be searched.

Processing: 1), check whether the front bus module power supply is normal.

2), check whether the front bus module wiring is normal.

3), if you use the branching device, you only wire 1 branch device and search, then wire the other 1 branch device and search after the first branch device searching is completed.

3, Equipment drop off.

Processing: 1), check whether wiring meet wiring requirements.

2), check the power supply and the equipment wiring

3), replace a new module.

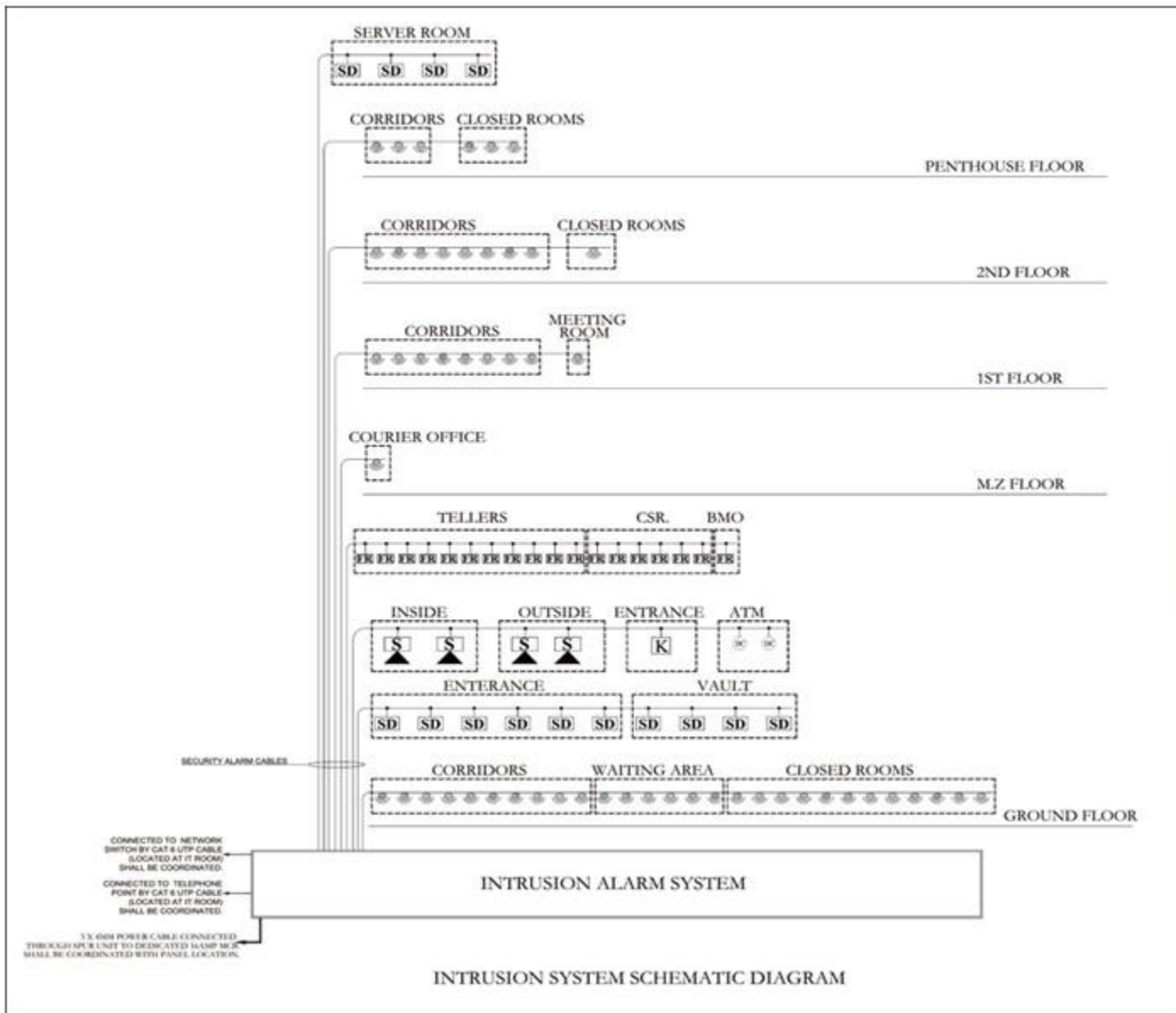
4, Prompt XX zone fault.

Processing: 1), check whether the zone is triggered.

2), check whether the signal wire is wired correctly.

Athena alarm

Case – customer requirement



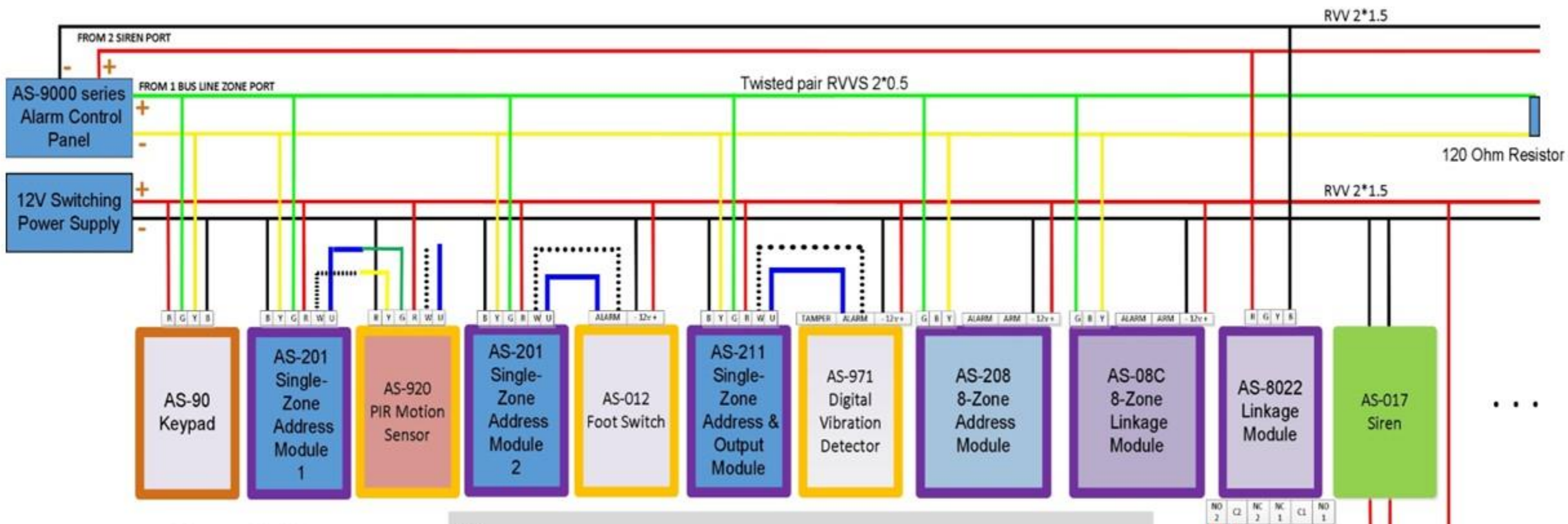
Customer Requirement

	PR	Foot Rail	Seismic Detector	Siren	Keypad
Ground floor	28	18	9	4	1
M.Z floor	1				
1st floor	9				
2nd floor	9				
Penthouse floor	6		4		
SUM	53	18	13	4	1

Equipment for customer

No.	Model	Item	Qty (PCS)
1	AS-9000FF	Alarm control panel	1
2	DC-12V/10A	Switching power supply	1
3	AS-201	Single-zone address module	84
4	AS-8022	Linkage module	4
5	AS-920	Infrared detector	53
6	AS-012	Foot switch	18
7	AS-971	Digital vibration detector	13
8	AS-017	Siren	4

Case – wiring diagram



- R** means Red Wire
- B** means Black Wire
- G** means Green Wire
- Y** means Yellow Wire
- U** means Blue Wire
- W** & means White Wire

Note:

- 1, The AS-012 foot switch and AS-971 digital vibration detector connect to alarm port. The positive, negative ports are the same.
- 2, Please according to the AS-211 single-zone address & output module, AS-208 8-zone address module and AS-08C 8-zone linkage module's user manuals to connect to the sensors or output devices.
- 3, Please according to the AS-201 single-zone address module, AS-211 single-zone address & output module, AS-208 8-zone address module and AS-08C 8-zone linkage module's user manuals to dial code.