USER MANUAL

AMP-119D Multi-route Spark Diverter

Jiangsu AMPEON Electronic Engineering Co.，LTD

http://www.ampeon.cn

Prelude

Thanks for using new models AMP series of high performance metal & spark diverter produced by Jiangsu Ampeon Electron Engineering Co., Ltd. AMP series products are manufactured with high quality units, materials and with the utilization of latest microcomputer technology. Jiangsu Ampeon Electron Engineering Co., Ltd. continuously practices the design and innovation of the product and provides excellent products with professional attitude. Furthermore, it responds to the customers with professional service and benefits each other with the customers.

The manual provides Warnings about the installing, parameter setting, troubleshooting and daily maintenance of metal & spark diverter to the user. In order to assure the proper installing and usage of the product, please read this manual in detail before installing. Please keep the manual well and give it to the operator of the machine.

Welcome to visit the website of Jiangsu Ampeon Electron Engineering Co., Ltd. : www.ampeon.cn. The website provides the download of the operation instructions and technical BBS service.

The following are the Warnings that need special attention:

▲**Warning！**

1. First please carry out the delivery inspection and check whether there is damage caused by transportation process.
2. After unpacking, please compare with the packing list and check the type, specification and components of the product. If it does not conform to your order documents or if you have any questions regarding the product, please contact to the dealer or the service office of our company.
3. Jiangsu Ampeon Electron Engineering Co., Ltd. provides services of the three guarantee period 18 months from the delivery date.
4. Troubles due to lightning strike, water invasion and obvious artificial miss or damage etc. are not in the range of repair guarantee.
5. Metal & spark diverter series products are important products of the fore-spinning procedure in cotton spinning mill. But the users in cotton spinning mill should also take integrated measures in fire protection equipments, selection of material, management regulations etc. to assure the safety production.

▲**Warning！**

1. The power supply must first be shut down before the electric wiring,.
2. Wiring, repairing & maintenance of the machine should be carried out by electric professionals.
3. Do not carry out compression test toward the inner components because the semiconductor units are easy to be broken down by the high voltage and are easy to damage.
4. The circuit board CMOS integrated circuit is apt to static electricity damage. So you should take the static electricity prevention measure before touching the circuit board with hand.
5. As the machine is installed to the pipe in high place, installing personnel should take safety measures. Suspending or bracket should be solid to prevent the machine from dropping down.
6. Select safety area to install the equipment, prevent the high temperature & direct shinning and avoid humidity and splashing of the water drops.

C o n t e n t s

A. Overview

1. Use and structural characteristics

AMP-119D multi-route spark diverters are used for detecting sparks in the ducts those convey material by wind. This product is widely used in the cotton mill for fireproofing in the production line of the blowing and carding, rolling of opening and cleaning procedure and dust filtration system.(see figure 1-3).Besides, it can also be used well in chipboard industry, furniture industry and grain processing.

AMP-119D multi-route spark diverter can detect tiny sparks and embers in the textile fibers, other delivery material or dust. Once the diverter detects sparks, it will alarm immediately, stop the fan and switch on the diverter at the same time to ensure the safety of production. It is a fireproofing equipment of easy installation, flexibility configuration, safety use and adapting to any environment.
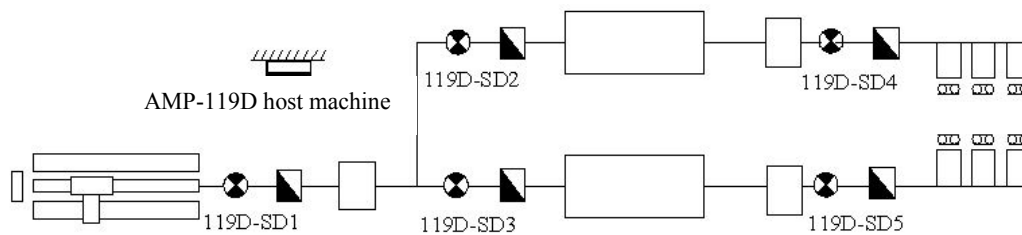

Figure 1: production line of the blowing and carding, the typical configuration of AMP-119D host machine & spark detectors
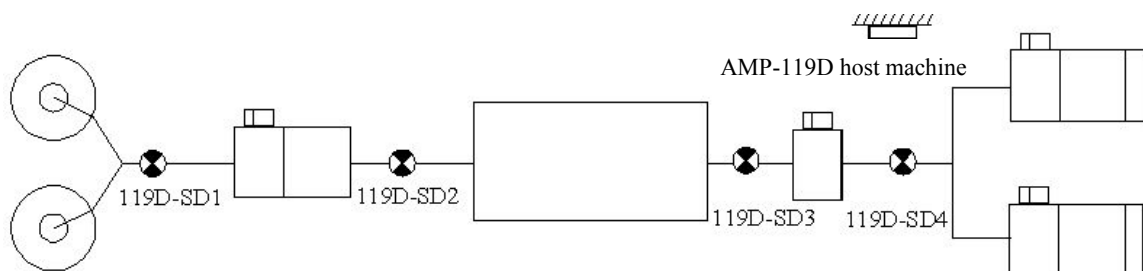

Figure 2: fireproof on the typical opening and picking process, with AMP-119D and spark detectors
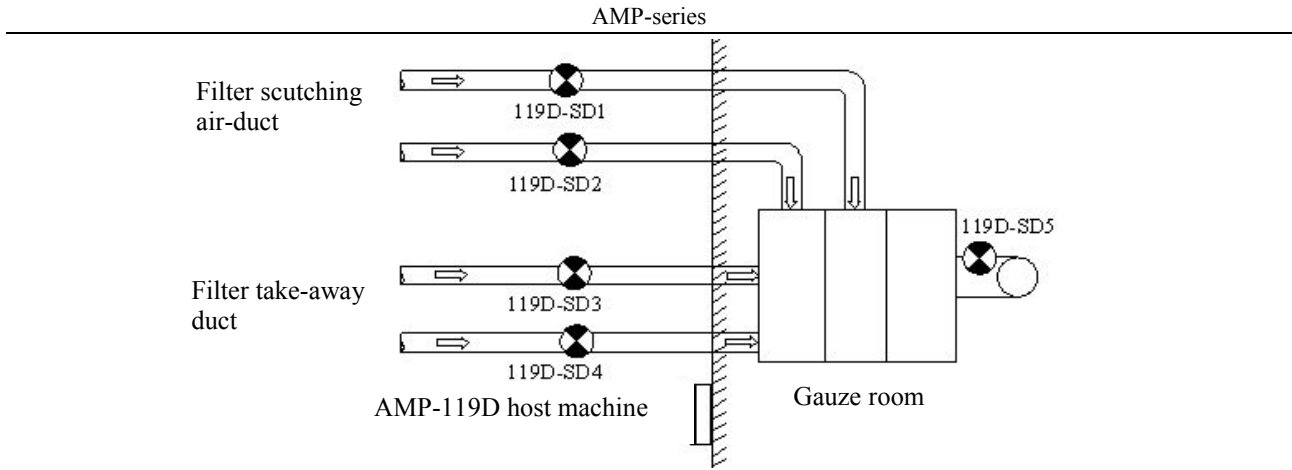
Figure 3: fireproof in dust filtration system, the typical configuration of AMP-119D host machine and spark detectors

The equipment consists of the hose machine (figure 4) and spark detectors (figure 5). Users can choose to install A010 type fire-exhauster body or A020 type fire-exhauster executive body. By the way, the two fire-exhauster bodies are not equipped with 119D control boxes, but prepared by the users.

AMP-119D type multi-route spark diverter has the functions as follows:

1) It takes leasing mechanism of host machine and spark detectors, users can match as many as 32 spark detectors according to their own fire protection requirements.

2) The spark detectors adopt the method of infrared induction which has the functions of high sensitivity, rapid response, wide detecting extent and stabilized worked, besides, every detector has its own communication address.

3) The spark detectors and host machine are taking the power wave communication. They can be connected with only two wires and the transferring distance is long, it's easy and dependable.

4) The host machine has LCD, so when fire alarm happens, it alarms with sound and light, at the same time, it will store the alarming time automatically beside showing the alarming area.

5) Users can choose to install A010 type fire-exhauster body (equipped with extinguisher box) or A020 type fire-exhauster executive body (contains quench bag).

6）It has RS-485communication connector, the communication protocol of Modbus adapt to the network management of the factory.

2. Technical parameter

1）Sensitivity : Bigger than Φ 1mm spark, visual angle is no less than 90º

2）Response time: <300ms

3）Power supply: AC220V±10%

4）Power: Statics <30W, alarms< 90W

5）Gas pressure range: 6～8kgf/cm²

6）Output relay contact load: AC220V/3A

7）Sound level of alarm: >60db

8) Requirement of the environment: Temperature 0℃—40℃, relative humidity ≤65%RH

9）The number of spark detectors equipped :1-31(extended)

10）The communication length: <200m

B. Electric wiring and installing

1. Installing

When installing and working with the equipment, please be sure to have read and understood all the user instructions, for the correct electric wiring and installing are important.
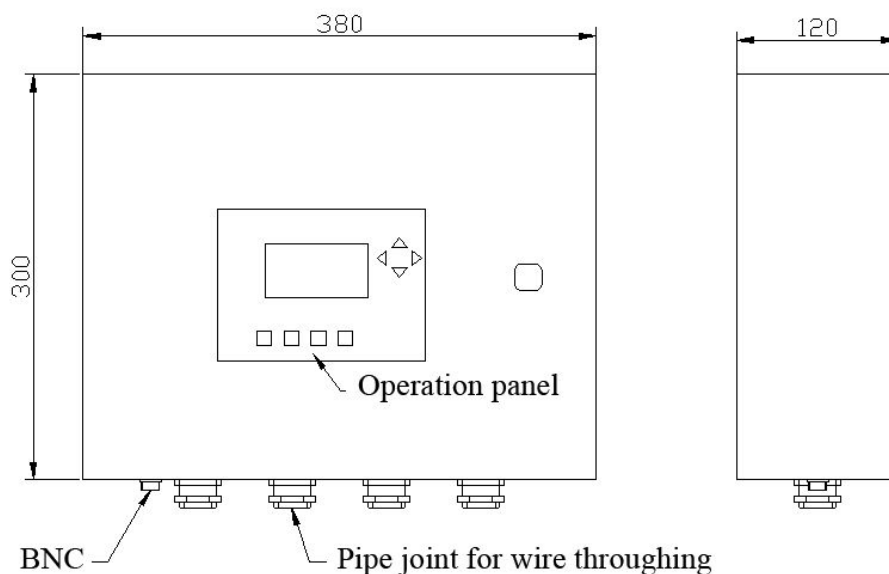
1.1 The host machine

Figure 4: the host machine

1）The host machine is usually hung by wall, fixed with M6 expansion screws. Please install this equipment at the obvious place, so that it would be found by the operators on duty upon the fire alarms**.**

2）The host machine has displays of fire-alarm area and real time, as well as the alarm buzzer equipped. It will alarm with sound and light as well as shows the correct alarming address after the host machine decodes the signal from the alarming detector. Besides, there are six couples of output relay signals controlling the work of the corresponding fans or the whole production line as well as driving the trash removal mechanism to extinguish a fire, press the RESET key to return the machine to the normal, meanwhile, the latest alarm-message would be saved.

1.2 Spark detectors（119D-SD type）

1) A hole of Φ22mm (it should be round, smooth without burry-feeling) is needed to be drilled on the pipe for cotton transmission, when install the detector, make it to aim at the hole. The detectors can adsorb on the metal pipe for the strong magnetic.
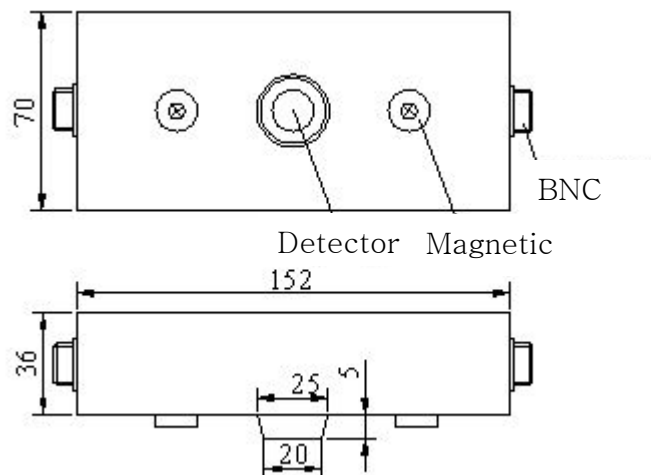

Figure 5: diagram of spark detector

2) The power lines of detectors should be shielded cables with two-core to prevent the interference signals, and the two-core shielded cables should be protected by collars to avoid being short. By the way, the soldered plugs should be also connected to BNC reliably.

3) Pay attention to avoid direct shinning or reflecting from the sun into the inspection area, otherwise it may trigger false alarms.

4) The alarming signals of detector transfer the current carrier by the method of code modulation, and each detector works separately. Detectors can be series or parallel connection, and that is flexible. The code address of detector is carried out by five-binary system of coding in itself (see table 1 in this chapter).
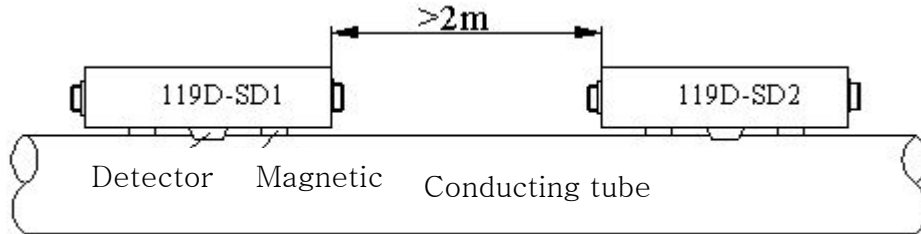

Figure 6: installation distance between two spark detectors

☞ **Warning:**

Don't install over two detectors at the same place, the distance between them must be at least 2m, otherwise it might alarm at the same time if there was a fire behavior, and that may display unknown messy code on the communication cable of host machine.

1.3 Auto extinguisher system for optional

As the differences between the components of fire extinguisher, the extinguisher system can be grouped into two types: one is A010 (optional part) , and the other is A020 (optional part).If the extinguisher system is necessary to be installed, the distance between this system and the corresponding detector should be over 4m to ensure enough time for the extinguisher to react.

1）A010 type auto diverting system (optional part)

A010 type auto diverting system consists of three-way pneumatic extinguisher valve and extinguisher box. The valve can separate the conducting tube immediately, and push sparks, embers or contaminated cotton into the extinguisher box. The system needs 6~8kgf/cm^2 air input, it has reliable structure and easy maintenance.
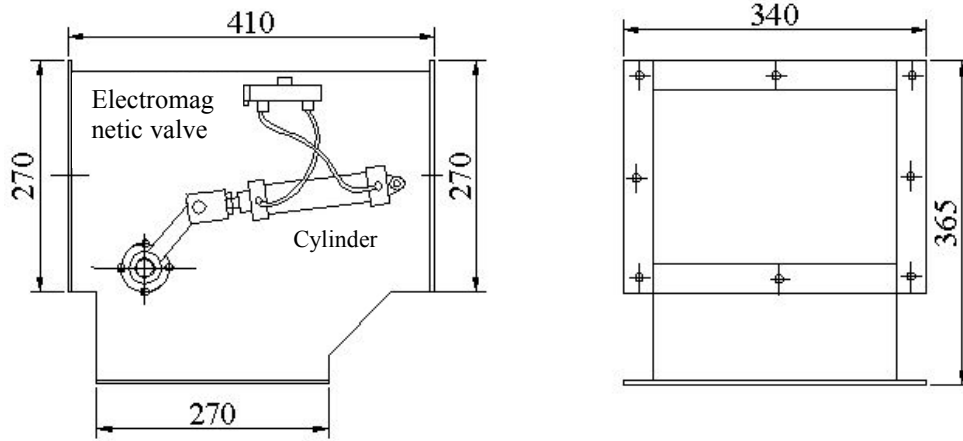
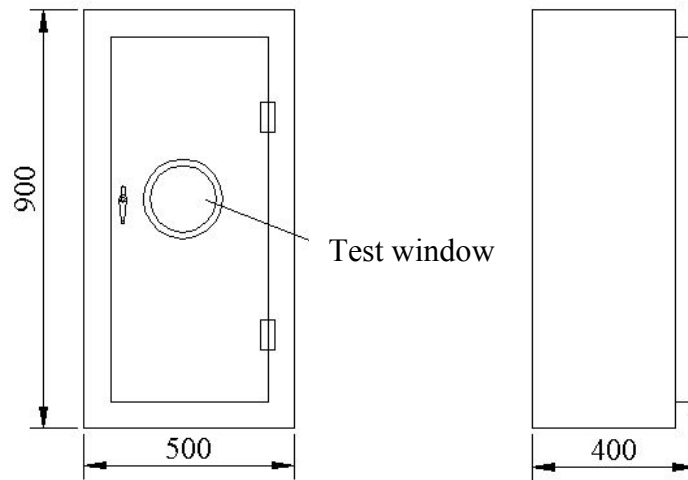Figure 7a: dimension of A010 three-way pneumatic extinguisher

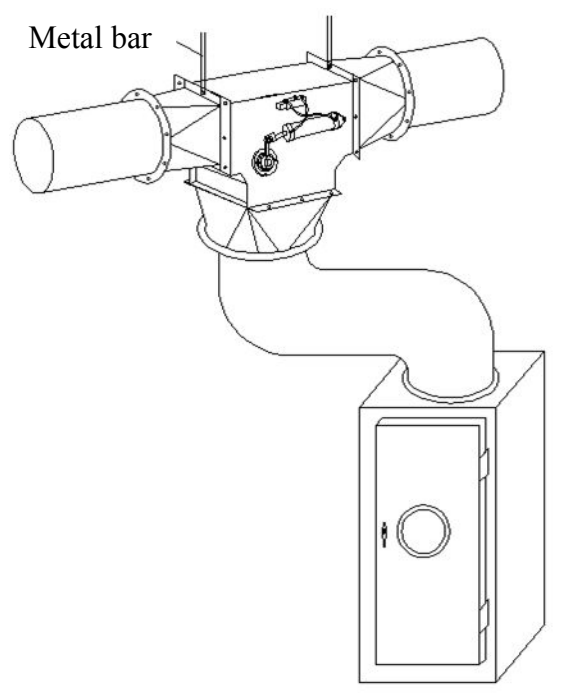Figure 7b: dimension of A010 type extinguisher box

Figure 7c: installation of A010 type extinguisher system

2) A020 type auto diverting system (optional part)

A020 type auto diverting system uses flame retardant material making of quench bag instead of extinguisher box, it's connected with three-way pneumatic extinguisher valve to form the diverting system. Once a fire alarm happens, the valve will shut down the conducting tube, and pop the quench bag out of the box to collect fire cotton.
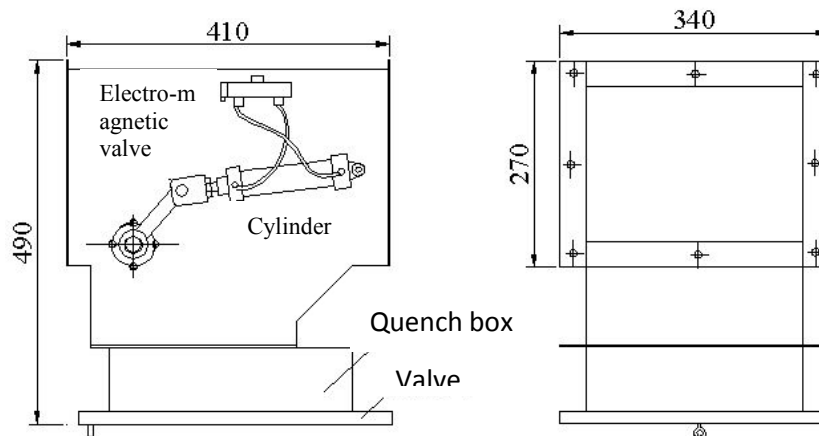

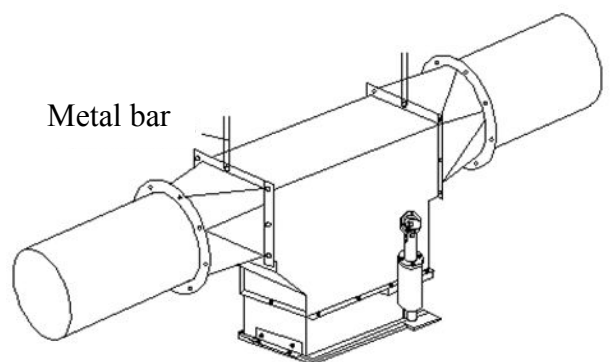Figure 7d: dimension of A020 auto diverting system

Figure 7e: installation of A020 type diverting system

☞ **Warning!**

As A020 type uses quench bag instead of extinguisher box, it needs no ground space, it's usually used on the top of multi-bin mixer or in the workshop that can't install extinguisher box for the limited of area.

2. Electric wiring
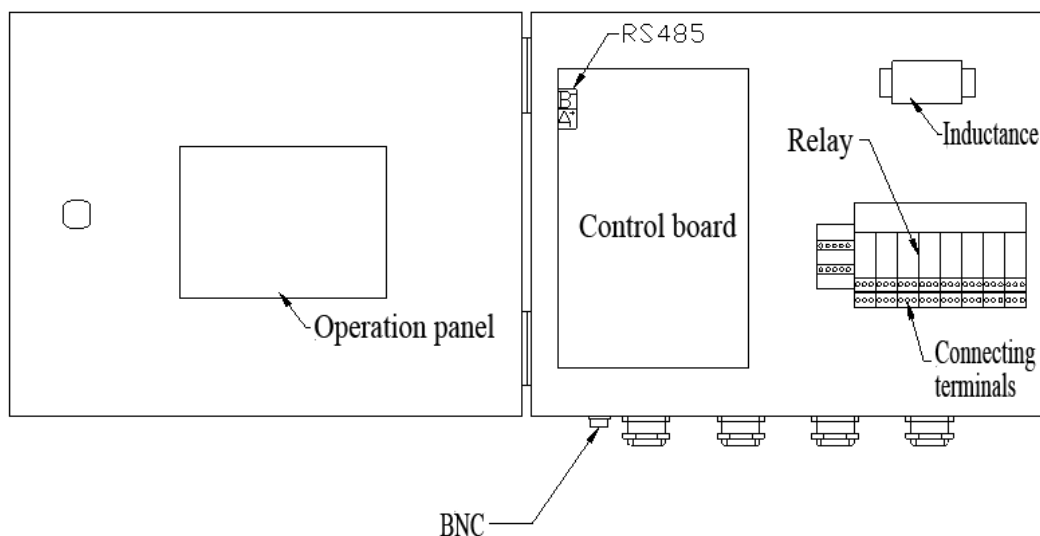
Figure 8: inner of the control box
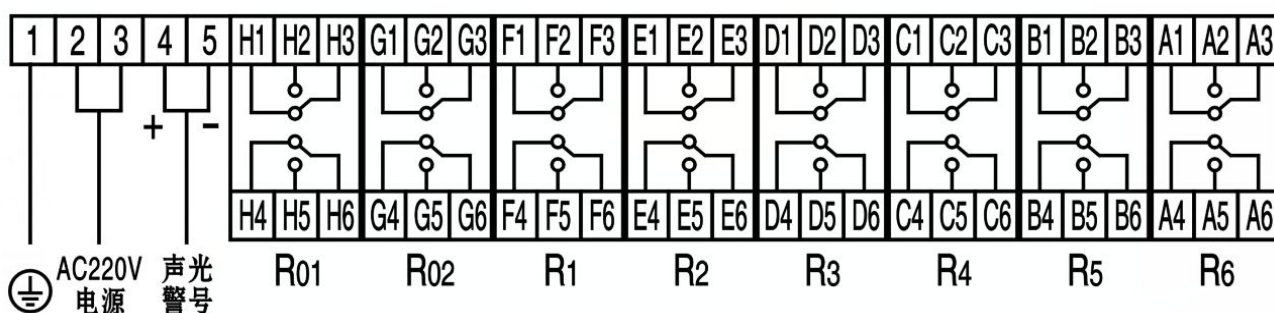
Figure 9: diagram of the connectors

2.1 Wiring instructions of the control box

1) Connectors 2,3 are the power input 220V while connector 1 is GND. Avoid sharing the power with other equipment that may produce interference, supply the power separately if possible. Moreover, pay special attention to avoid shutting off the power on the time of fire alarm.

2) Connectors 4、5 are connected with horn strobe (accessories of control box).

3) BNC is used to connect with the spark detectors.

☞ **WARNING!**

Don't use the AC220V from the control transformer in electrical cabinet.

4) This machine has 8 executive output relays, they are R_{01}、R_{02}、R_1、R_2、R_3、R_4、R_5、R_6。R_{01} and R_{02} are extended relays, they are to adopt parallel connection with R_1、R_2 (when R_1 and R_2 be activated, R_{01} and R_{02} be activated at the same time) .

Every relay can supply two couple of passive normally open and closed contacts (contact capability: 10A,220VAC).

Contact definition: take R_1 for example, F1、F5、F4(NO、C、NC) as a group, F3、F2、F6(NO、C、NC) as another group.

☞ **WARNING!**

Every relay output can be programmed by 'output set', and corresponding with spark detectors (More details, have been assumed in figure 16: 'Output set' menu page).

2.2 Wiring and usage of 119D-SD spark detectors
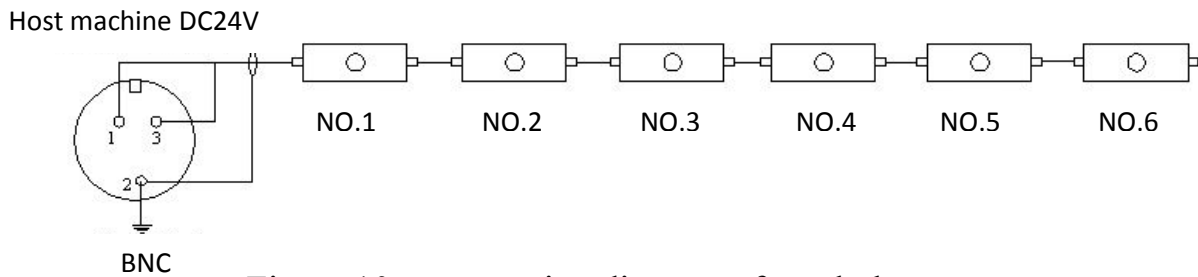
Host machine DC24V

Figure 10a: connecting diagram of spark detectors
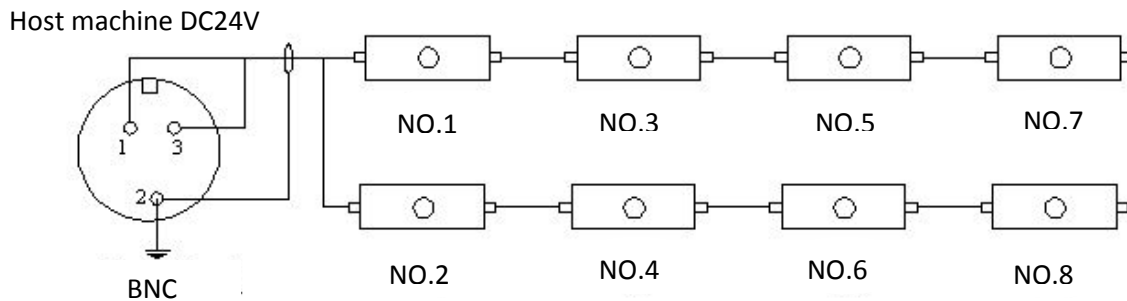
Host machine DC24V

Figure 10b: connecting diagram of spark detectors

1) Core yarn NO.1 and 3 supply DC24V for spark detectors from the host machine, and NO.2 is the shield layer. There is a bridge rectifying circuit in the inner of detector, thus there's no requirement of the polarity for power.

☞ **WARNING!**

Detectors should be connected with shielding cable with two core yarn.

2) Since the signal is transmitted via the power carrier, the connection between the detectors can adopt to the practical situation flexibly. Figure 10a and 10b show such typical connections. The connection principal is that the shorter the distance between the host machine and the detector is, the better the

connection is. And each detector can work once offered the DC24V by the host machine.

3) Set spark detector address of 119D-SD

Open the lid of the detector, there is a five-coder of DIP switch by which the detector address could be set in binary mode. e.g: 00101 is detector 5, 01000 is detector 8, 10001 is detector 17. The range is 00000-11111, from 0 to 31. For details, refer to Table 1.

DIP coder

DIP coder switch set: switch on, means 1

Switch off, means 0

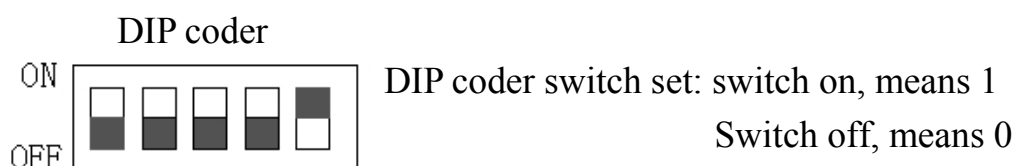| Switch set	NO.	Switch set	NO.	Switch set	NO.	Switch set	NO.
0 0 0 0 0	0	0 1 0 0 0	8	1 0 0 0 0	1 6	1 1 0 0 0	2 4
0 0 0 0 1	1	0 1 0 0 1	9	1 0 0 0 1	1 7	1 1 0 0 1	2 5
0 0 0 1 0	2	0 1 0 1 0	1 0	1 0 0 1 0	1 8	1 1 0 1 0	2 6
0 0 0 1 1	3	0 1 0 1 1	1 1	1 0 0 1 1	1 9	1 1 0 1 1	2 7
0 0 1 0 0	4	0 1 1 0 0	1 2	1 0 1 0 0	2 0	1 1 1 0 0	2 8
0 0 1 0 1	5	0 1 1 0 1	1 3	1 0 1 0 1	2 1	1 1 1 0 1	2 9
0 0 1 1 0	6	0 1 1 1 0	1 4	1 0 1 1 0	2 2	1 1 1 1 0	3 0
0 0 1 1 1	7	0 1 1 1 1	1 5	1 0 1 1 1	2 3	1 1 1 1 1	3 1

Table 1: coder switch set

3．Earthing and safety

1) You should earth properly according to the safety standard. This equipment needs to be separately earthed, and it's recommended the earthing wire be as short as possible and it is prohibited to earth it together with other equipment.

2) While overhauling, please first shut down the power supply and interrupt the pressurized air supply. The temperature of the radiator is very high. So don't touch it to avoid burn.

3) After the spark alarm, you should shut down the general power supply of the procedure and then put out the fire.

4) The spark test or repairing work that needs climbing should be carried out by more than two people.

C. Debugging and usage maintenance

1. Indicative and adjustable parameter of the control panel

1.1 Displays of the panel

1）The main working page
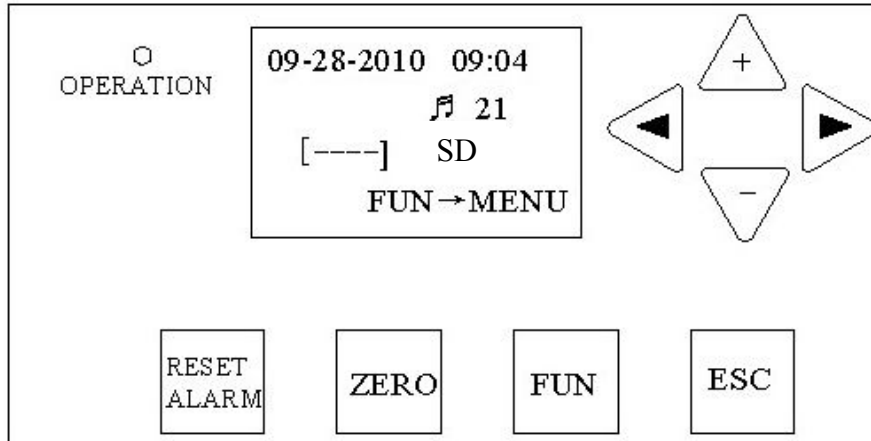
Figure 11: Diagram of control panel and main page

Displays in panel	Meanings
09-28-2010 09:04	On Sep.28th, Year 2010, 9:04 AM
♬ 21	There are 21 alarm messages
【----】SD	【 】shows the address of alarming detector
FUN→MENU	① Indicates you press the key 'FUN' to shift the main page to parameter settings. ② 'Locked' will be appearance when the keyboard locked.

Table 2: messages display in panel on Figure 11

2) Once the spark alarmed, messages displayed in LCD

Figure 12: LCD displays during the fire alarm

LED 'OPERATION' will flash once fire alarm happens, and appear the page of Figure 12, for details, see Table 3.After pressing the reset key ┌─────┐ **RESET ALARM** └─────┘ ,the fire page will return to the main page.
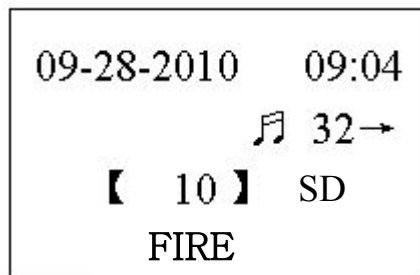
Displays in panel	Meanings
09-28-2010　09:04	On　Sep.28th,Year　2010,　9:04 AM
[10]　SD FIRE ALARM！	Detector 10 is alarming
♫ 32　　→	There are 32 alarm messages

Table 3: instructions of Figure 12

3) Pressing the key 'FUN' (press 'FUN+▲' under the state of key locked) to enter into the Function set, see Figure 13.
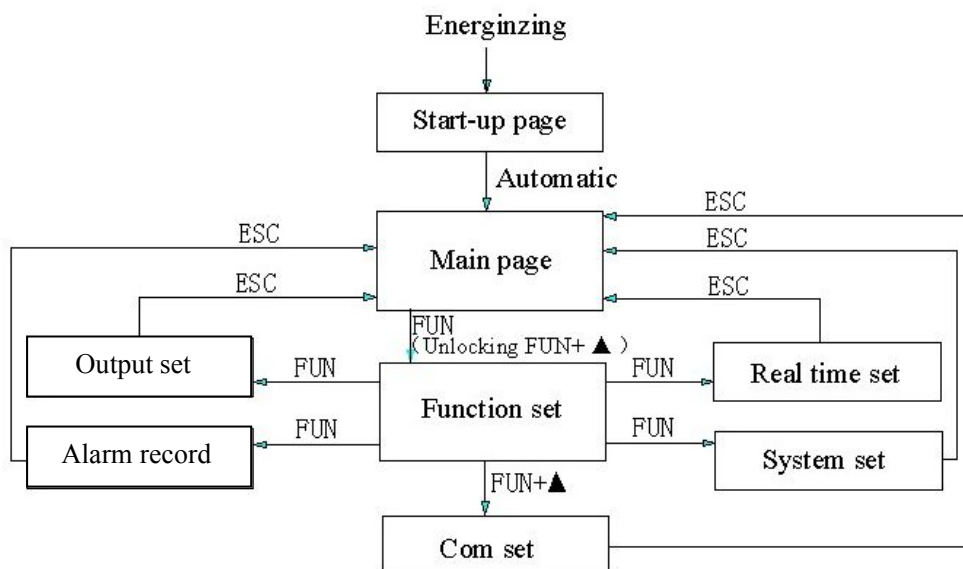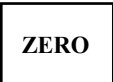
Figure 13：Diagram of switching the display pages

1.2 Explanation of the keys

① ┌─────┐ **RESET ALARM** └─────┘ Reset alarm. This key has the function of reset the machine.

② ┌─────┐ **ZERO** └─────┘ Counter clear. To clear alarm records in the 'Alarm record', press the key 'FUN' as well as 'zero'.

③ FUN Function key. The key is used to switch the menu page. If the main page was locked, pressed the key 'FUN' as well as the key '▲' to enter into the parameter setting page. We will call it 'FUN' for short.

④ ESC Disengaging key. After pressing the key, you will return to the main page.

⑤ △+ up key, ▽− down key，◁ left key, ▷ right key. These keys have the functions of switching parameter settings and changing the data，and we will call them '▲，▼，◀，▶' for short as follows.

2. Parameter setting

After pressing the key 'FUN' on the main page, you will turn to the page of parameter settings.

| 1. Real-time set |
| 2. System set |
| 3. Function set |
| 4. Alarm record |

Press the key '▼' →

| 2. System set |
| 3. Output set |
| 4. History |
| 5. Communication |
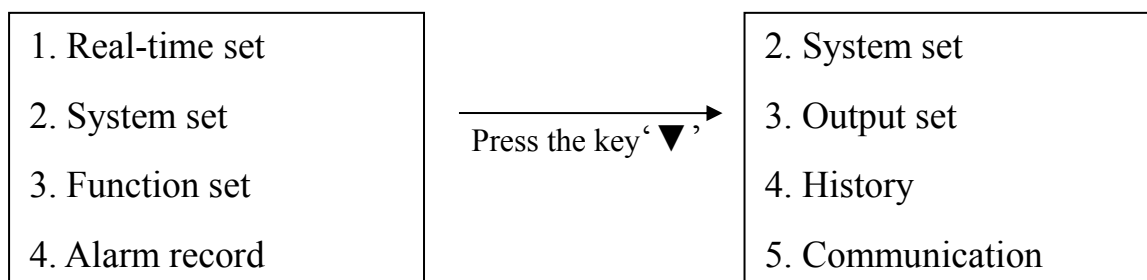
Figure 14: Parameter settings

When the cursor is flashing in the '1.Real time set' item, press the key 'FUN' to enter into time settings, use the key '▲，▼' to switch positions of the cursor. Press the key 'FUN' entering into the screen where the cursor stayed.

2.1 Real time set

After you enter into the time setting page, press the key '▲,▼' turning to switch among the month, date, year, hour, minute. Through pressing the key '◀,▶', we can change the value of the data. After finishing the setting of the time, press the key 'ESC' to return to the main page.

14

```
09/28/2010
 08:04
 Time set
              ESC→Exit
```
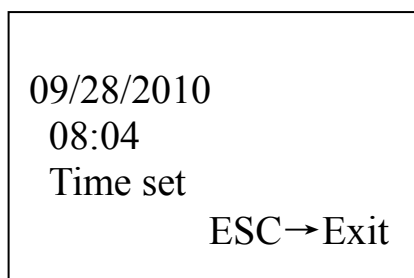
Figure 15: real-time settings

2.2 System set

After entering into the 'System set' page, press the key '▲, ▼' to shift between the two items.

```
1.Chinese        中文

2. 键盘锁        OFF
```
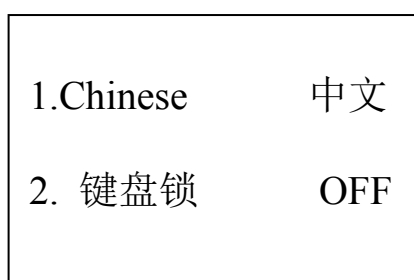
Figure 16: system settings

1) The cursor is flashing in the ' 1. CHINESE 中文 'item, shows that we can choose according to the language, press the key '◄, ►',then we can change the system's language between Chinese and English.

2) The cursor is flashing in the '2.key lock' item, shows that we can lock or fix the keyboard now, pressing the key '◄, ►' to switch 'ON' and 'OFF'. 'ON' means locked.

2.3 Output set

After entering into the 'Output set', press the key '▲, ▼' to switch among six couples of parameters, and press the key '◄, ►' to change the value.

```
Output set

(1)1~05        (2) 6~10
(3)11~16       (4)17~22
(5)23~31        (6)0~31
```
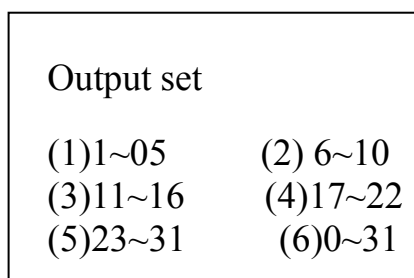
Figure 17: Output settings

The messages in Figure 17 show the spark detector addresses corresponding to the control relays. The above six couples of parameters are corresponding to six relays, that is to say, when there is a fire alarm, the corresponding relays act. And the users can adjust it as their needs. E.g.: '(1)1~5' means Relay R1 would act if the detector in NO.1 to NO.5 alarmed, so if we made a change like '(1)6~25' then R1 would act only the detector in NO.6~NO.25 alarmed.

2.4 Alarm record

In the parameter setting, when the cursor flashes in NO.4 ' 4.Alarm record' item, you can press the key 'FUN' to enter into the History inquiring page, and then read the recent records of metal detected and spark alarming.

火警记录： ♫ 21

09-28-2010 09:04

[10] SD

Figure 18: Alarm record

1) 09-28-2010 09: 04 recorded the last alarm time, press the key '►' to turn to the former records. This machine could store 40 alarm messages, that is to say, once there was 40 messages saved, the 41st message would be stored as the first message, and the last 40 messages were cleared.

2) Press the key 'FUN' with the key '▼' to clear the alarm record one by one. You can also press the 'FUN' with the key 'ZERO' to clear all the records at a time.

3) 'ESC' returns to the main page.

2.5 Communication

In parameter setting, when the cursor flashes in NO.5 ' 5. Communication' item, press the key 'FUN+▲' to enter into the Com setting page.

1. Com. Address 1

2. Baud rate 38400

3. Modbus Network
   (7,N,2 ASCII)

Figure 19: Communication

1) When the cursor flashes at the item '1.Com. Address', the communication address can be set between 1-15. e.g.: if set 1, the communication address was NO.1. (The factory set is 1)

2) When the cursor flashes at the item '2.Baud rate', press the key '▲, ▼' to change the value among '38400bit/s、19200bit/s、960bit/s、480bit/s', and the factory set is 38400bit/s.

3) RS-485 can be set up to communicate on Modbus networks, baud rate is 19200bit/s, and the communication protocol uses Modbus ASCII mode ,protocol <7, N, 2 >.

3. Parameters of communication protocol

3.1 10-bit character frame（for ASCII）

Start bit	0	1	2	3	4	5	6	Stop bit	Stop bit

3.2 Communication protocol

STX	Start character =':'(3AH)
Address Hi	Communication address： 8-bit address consists of 2 ASCII codes
Address Lo	
Function Hi	Command Code： 8-bit command consists of 2 ASCII codes
Function Lo	
DATA（n-1）	Contents of data： n×8-bit data consist of 2n ASCII codes n<=20,maximum of 39 ASCII codes
……	
DATA 0	
LRC CHK Hi	LRC check sum： 8-bit check sum consist of 2 ASCII codes
LRC CHK Lo	
END Hi	End characters： END1=CR(0DH)，END0=LF(0AH)
END Lo	

3.3 Functions

03H: multi read, read data from registers

Command message：

STX	':'
Address	'0'
	'1'
Function	'0'
	'3'
Starting address	'0'
	'0'
	'0'
	'0'
Number of data (count by word)	'0'
	'0'
	'0'
	'4'
LRC Check	'F'
	'8'
END	CR
	LF

Response message：

STX	':'
Address	'0'
	'1'
Function	'0'
	'3'
Number of data (count by word)	'0'
	'8'
0000H	'8'
	'0'
	'8'
	'0'
0001H	'0'
	'0'
	'6'
	'9'
0002H	'1'
	'6'
	'1'
	'5'
0003H	'0'
	'0'
	'2'
	'3'
LCR Check	'3'
	'D'
END	CR

3.4 Address list

The contents of available address are shown as below:

Status monitor Read only	0000H	bit7	1: Chinese 0: English
		bit8	1: Detect sparks
		bit15	1: The machine works normally
	0001H	Address of the alarming detector	
	0002H	Real-time of the machine	
	0003H	The counter of alarmed messages	

4. Fire alarm simulation test

1) There is an active window on the pipe beside the spark diverter. Shine the spark detector through the small window and it will be OK if the controller can carry

out normal action.（The tungsten filament of the torch is a hot body and includes infrared ray）During action, it alarms with sound and light, so it is necessary to turn off the alarm manually.

2) During the normal use, if fire alarm happens, the fan and other machinery's operation cannot be started until the cause is found out. Occasionally although the spark is small and can be out by itself, we should also stop for not less than half an hour and we cannot start until it is inspected and the safety can be assured.

☞**Warning:**

① **The spark alarm function should be checked regularly with simulation test to assure that they are in the good working status. It is suggested that the test be carried out at least once every two weeks.**

② **The dust and waste on the surface of lens in spark detectors must be regularly checked and cleaned.**

③ **If the system is equipped with a diverter, it also needed regular check and maintenance to avoid turning plate transposition or fuzzy edge.**

D. Diagram showing wiring principle of AMP-119D Multi-route Spark Diverter
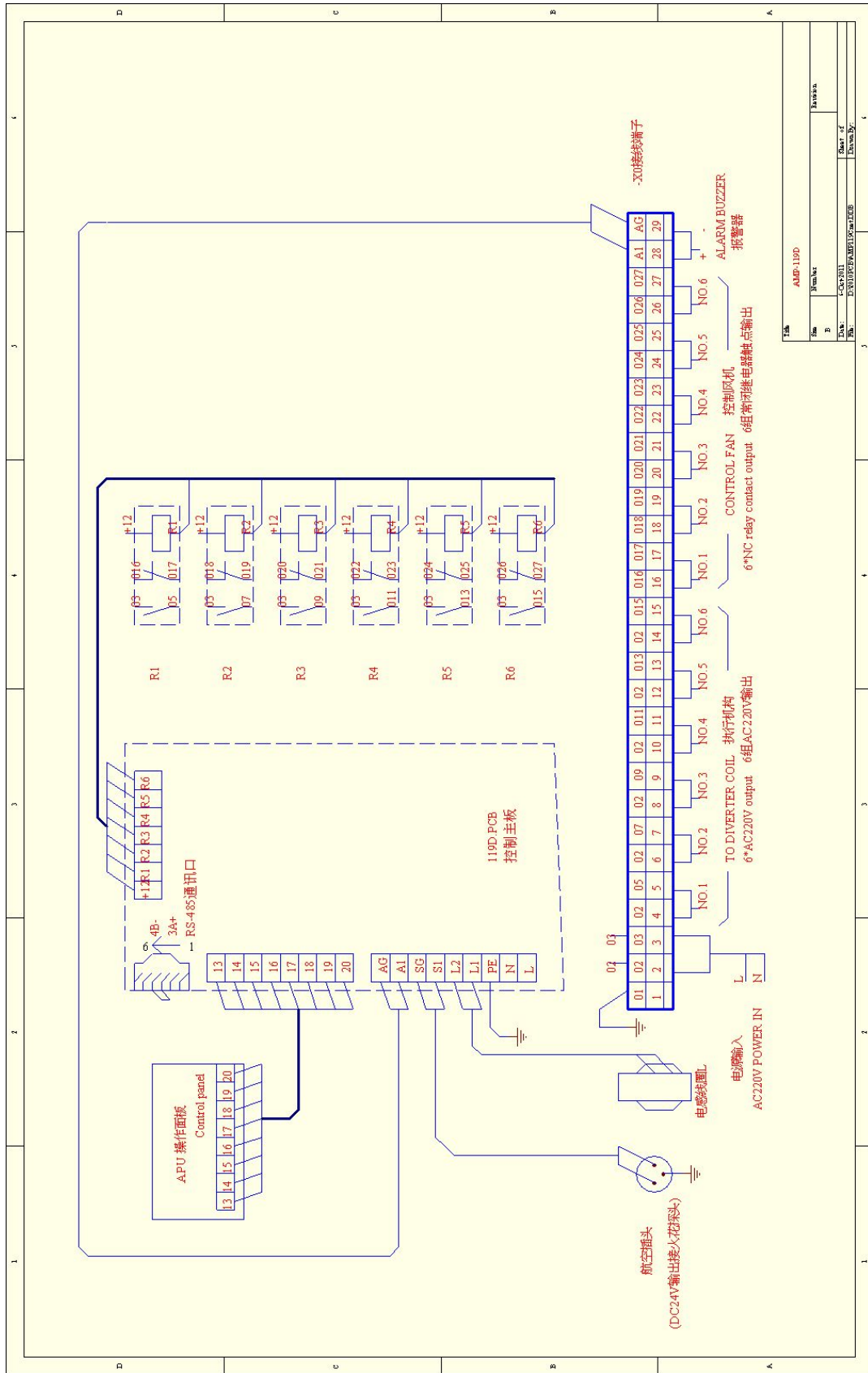
E. The practice of blowing and carding line fire alarm

Most of the material in cotton spinning mill are combustible substances such as cotton, chemical fiber etc. The frequent happening of the fire alarm in scotching workshop is a problem that gives management personnel much trouble. Blowing and carding procedure utilizes reciprocate bale plucker to pluck the wool. Large quantity of wool bags stack in the workshop and large volume of combustible material is stored in multi-box mixing openers and blowing & carding boxes. Furthermore, through the whole procedure of the blowing and carding line, the pipes are sealed and large quantity of blower fans and dust filtering equipments are utilized. Because of the above situation, in case of fire alarm, large loss will happen. Not only will the material be lost, expensive machines will also be burned and damaged. The more important thing is that the production will be affected. In case that the blowing and carding line stops production because of fire alarm, it will affect the production operation of the whole spinning mill. As the blowing and carding line becomes popular and comes to our use, the prevention of fire alarm in the blowing and carding line becomes more important. In this text, we will discuss the prevention of the fire alarm in the blowing and carding line and the practice process after purchasing the product of Jiangsu Ampeon Electronic Engineering Co., Ltd.!

A. Discussion about the cause of the fire alarm

1. The iron scraps directly mix into uniaxial, biaxial and other opening machine. So the beaters violently rub and strike with each other and that is the cause of fire alarm.

2. The iron scraps mix into the blower with the wool flow, the high speed flying blade of the blower fan strikes the iron scraps or iron scraps rub with turbo housing of the fan and then spark happens and finally fire alarm happens.

3. There are ropes, stones and rags etc. remained in the wool bag. When these sundries rub or strike with beater or fan blade, fire may also happen.

4. The problem of running such as the improper use of cotton waste. The wasted rags is not torn down and it includes spindle, wrap cloth, so may tangle with the beater and rub with the tangle , then fire may happen.

5. The install position of the spark diverting equipment is improper and the install position of the spark diverting head is not within the area that fire is easy to happen.

B. Through the installing of Ampeon series metal spark diverter, we can get the effect of 'nip in the bud'

1. It is manifested by the practice that through the installing of AMP-119AII spark diverter between the reciprocal bale plucker and other blower in the blowing and carding line pipes, the fire alarm that happens when beater of the bale plucker strikes and rubs can be prevented effectively. In the diverter of this product, the loss of the wool wind pressure is very small. So it applies to various situations such as positive, negative and positive & negative pressure. It is the first barrier in the safety production in blowing and carding production line. As an integrated measure, the installing of TF-27 bridge type iron in the blowing and carding line pipes can also

strengthen the effect of removing iron scraps.

2.Within the procedure, as multi-bin mixer and carding collect box store large quantity of combustible material, they are the most important object of our fire prevention. AMP-119AII spark diverter must be installed in the wool inlet. When infrared detector detects that there is spark inside the wool fiber, it will make the fire alarm with sound and light immediately. Related equipments such as blower fan will be automatically stopped. In the meantime, Diverting executive structure will act to discharge wool flow with fire and combustible scraps into the sundries box. Through this, we can assure that spark will not enter the next procedure. AMP119AII type is newly developed spark diverter produced by Jiangsu Ampeon Electron Co., Ltd. Through the usage of double detector, it can avoid the blind area. It is also equipped with clock function and it can record 20 alarm messages. Alarm content can include the year, month, date, hour and minute of the fire alarm.

3. Dust filtering system is also apt to fire alarm. AMP-119C type diverter utilizes the structure of main frame & detector separation .So the installing is simple, the disposition is flexible. Each mainframe may be equipped with 1-15detectors according to the need。 Through the installing of detector on the route of dust filtering system pipe, over the dust room and near the compactor, we can prevent the spark from expanding and causing fire effectively, so it can assure the safety production of the whole blowing and carding procedure.

C. The management assurance for prevention of blowing and carding line fire alarm

The strengthening of management is the key factor of decreasing fire alarm, good running(operation) management and equipment management can completely avoid the happening of the fire alarm.

1. When the wool is packaged in bags, the operator should tidy up all the iron wire and wrap cloth and manage to be cut basically flat in height. Make the cloth waste and wasted rugs distribute evenly. While packaging, there should be personnel to supervise and check.

2. The wasted rugs must be torn and packaged before using, control the sundries such as cutters and pipes.

3. Ask the scotching operator to do the patrol well, immediately find and remove the sundries in the bag. Furthermore, immediately remove the sundries in the collect box of metal and spark diverter.

4. Inspect and test the sensitivity and other various functions of metal and spark diverter. Through this, we can keep the metal and spark diverter in good working status.

5. There should be counter plan regarding the fire alarm disposition. When fire alarm happens in the blowing and carding procedure, scotching operator should not be in a pucker. Furthermore, for the proper handling, training and guidance is needed. You should arrange corresponding staff to study various prevention and salvage knowledge and understand the basic function and alarm message of metal and spark diverter. Improper handling may cause the fire to expand. (transferred from the website of Jiangsu Ampeon: http://www.ampeon.cn)

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