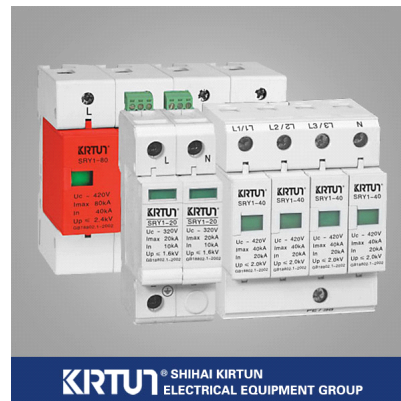


SRY1 Surge protective device

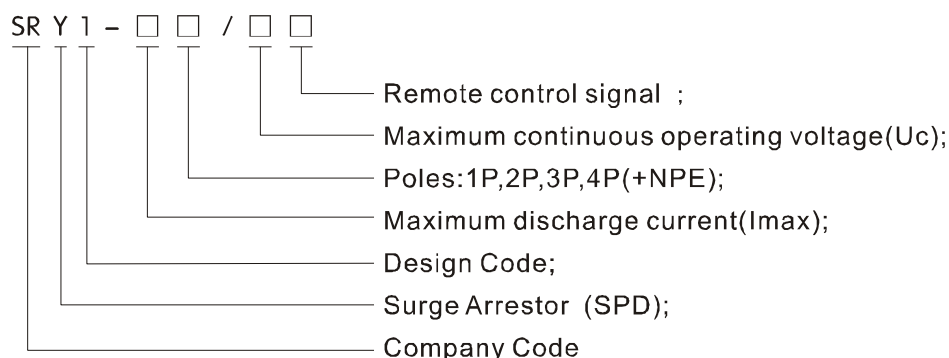
## 1. Application

Usage and application scope

SRY1 series surge protective device (protector in short) is applied in A.C 50/60 Hz ,  $\leq 380V$  in the following electric power system , such as TT , IT ,TN-S , TN-C and TN-C-S which protects the electric net shocked by the thunder or surge over voltage .



Model and meaning



Tripping device

There's tripping device designed on the modular of the protector. When the protector is over heat or shocked, the tripping device can automatically separate it from the electric net, at the same time showing the indication signal. It's green when the protector is normal, red when tripping.

Alarm

The power of the alarm is supplied by AC220V. In normal condition it is green and the opening contact is closed but the closing contact is open. It is with the function of alarming and showing: the alarm will sound and the green indicator lamp will change to red when the mould of the protective device is out of working. And the alarm will not stop until the operator pushes the stop press (but the red lamp is still showing). If the trouble can not be dealt within 24 hours, the alarm will sound again.

Remote signaling contact

The products can be produced available with the accessory of remote signaling contact which is an opening contact. If one of the product's mould is out of working, the contact will be closed and send the trouble information. The rated data of the remote signaling contact is AC36V, 1A.

Principal parameters

- |   |                                |
|---|--------------------------------|
| 1. Maximum continuous operating voltage | Uc~140 275 320 385 420 550V    |
| 2. Test classification                  | II grade                       |
| 3. Protection level                     | Up < 0.8 1.2 1.5 1.8 2.0 2.5kV |
| 4. Max. discharge current (8/20μs)      | I <sub>max</sub> 10 40 60kA    |
| 5. Nominal discharge current (8/20μs)   | In 5 15 20 30kA                |

**2. Specification**

## Technical Parameters

	BY1-D/ -140-55	BY1-D/ -275-	BY1-D/ -320-5	BY1-D/ -385-5	BY1-D/ -420-5	BY1-B/ -320-30	BY1-B/ -385-30
Maximum continuous operating voltage $U_c$	140 V	275 V	320 V	385 V	420 V	320V	385V
Voltage protection level $U_p <$	0.8 kV	1.0 kV	1.5 kV	2.0 kV	2.0 kV	2.0kV	2.5kA
Nominal discharge current $I_n(8/20\mu s)$ kA	5	5	5	5	5	30	30
Maximum discharge current $I_{max}(8/20\mu s)$ kA	10	10	10	10	10	60	60
Response time ns	<25						
Width mm	18						
Color	Yellow					Orange	
Protection level	IP20						
Shell material	Reinforced fire-retardant nylon PBT						
Fuse Or Switch (A)	10 --- 16A						
Connect ways	L ,N	2.5 --- 35 mm <sup>2</sup>					
	Earthing	4.0 --- 35 mm <sup>2</sup>					
	Signal line	1.5mm <sup>2</sup>					

	BY1-C/ 140-15	BY1-C/ -275-20	BY1-C/ -320-20	BY1-C/ -385-20	BY1-C/ -420-20	BY1-C/ -550-20
Maximum continuous operating voltage $U_c$	140V	275V	320V	385V	420V	550V
Voltage protection level $U_p <$	0.8kV	1.2kV	1.5kV	2.5kV	2.5kV2	.5kV
Nominal discharge current $I_n(8/20\mu s)$ kA	15	20	20	20	20	20
Maximum discharge current $I_{max}(8/20\mu s)$ kA	40	40	40	40	40	40
Response time ns	<25					
Width mm	18					
Color	grey					
Protection level	IP20					
Shell material	enforce anti- flame PBT					
Fuse Or Switch (A)	25-32A					
Connect ways	L ,N	2.5-35 mm <sup>2</sup>				
	Earthing	4.0 ---45 mm <sup>2</sup>				
	Signal line	1.5mm <sup>2</sup>				



SRY1 - B



SRY1-C



SRY1 - D

The installation position and application of BY -D

1. Installed on the joint of LPZ1 or LPZ2 and LPZ3.
2. Applied in household distribution boards, computer equipment, information equipment, electronic equipment and in the socket box in front of control equipment or near the control equipment.

The installation position and application of BY -C

1. C grade lightning current SPD protection, used for electric connection when being shocked.
2. Installed on the joint of LPZOB or LPZ1 and LPZ2.
3. Generally it's installed in the floor distribution board, computer center, telcommunication room, elevator control room, cable TV room, floor automatic control room, guard supervising room, fire protection center, industrial automatic control room, frequency conversion equipment control room, hospital operating room, supervising room and the distribution board with electronical medical equipment, also can be installed in the whole distribution board under the six floors household. To the individual building, the SPD should be installed in the distribution board of every household.

The main structure and operating principle

In three- phase four- line system, three phase lines and one zero line are connected protective device to the earth cable. (figure 1 ) . In normal situation, the protective device is high resistance, when the over voltage brings for electric network shocked by thunder or other reasons, the protective device will rapidly transmit in ns , then lead the voltage into earth and protect the electric equipment. As the surge voltage through the protective device and after disappear it will recover to high resistance and not influence the normal operating. Figure 2 is the electric principle about it.

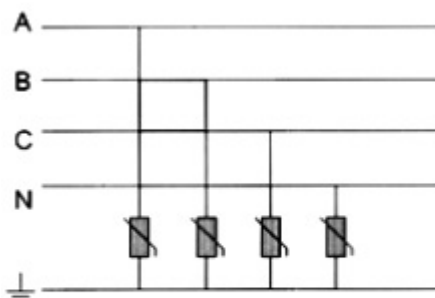


Fig1 380V net picture

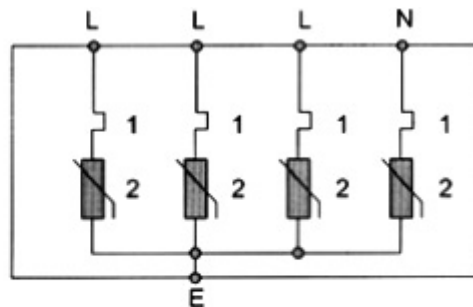


Fig2 SPD electric principal

Note: thermal malfunction tripping device  
voltage dependent resistance

### 3. Installation

It adopts 35 mm DIN rail

It is linked by 2.5 -- 35 mm<sup>2</sup> copper wire , and there are 2 wiring methods:

1. From power switch to protective device , then from protective device again to the load end . This way suits to the distribution case which load current is under 100 A . The wire section should be selected by the load current . ( Figure 3 )
2. From the power switch to protective device , also from the power switch to load end . This way suits to the distribution case which load current is over 100 A . The wire section should not be selected by the load current , but it can't be longer than 500 mm.(Figure 4 )

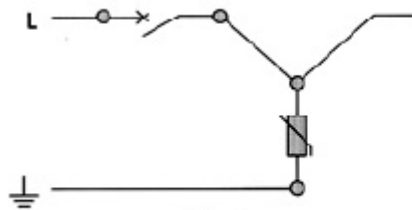


Fig3

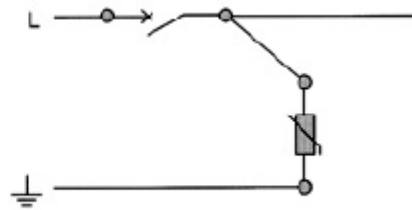
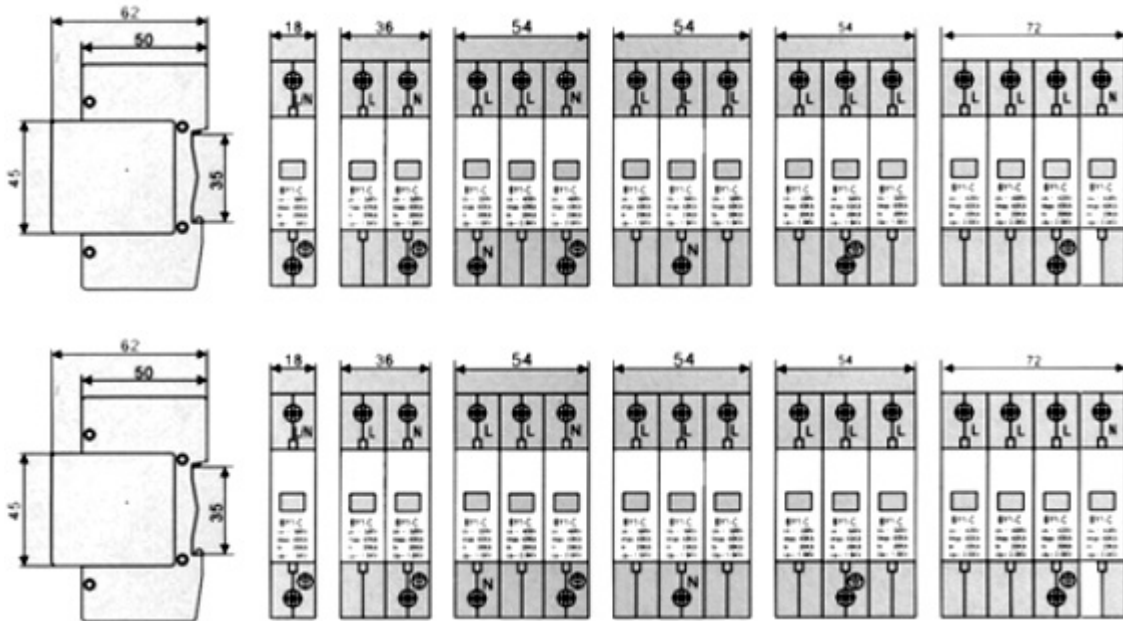


Fig4

The earth cable should choose the double color wire which is over 4 mm<sup>2</sup> but not longer than 500 mm .In order to guarantee electrical network's normal operating after protective device losing efficiency , the protective device which linked to the phase line must be connected a 32A fuse box

Appearance and installation size



Adjustment, operation, maintenance

1. There's no need to adjust the protector after installation.
2. The protector can automatically protect the electric net should it's installed rightly.
3. When operating, check whether the modular scutcheon is red, at the same time check whether the indication red light is lighting, then can change the malfunction device.