

# YCS6 Series


Surge Protection Device

## OPERATION INSTRUCTION

Standard: IEC 61643-1

**CNC**

Deliver  
Power For Better Life

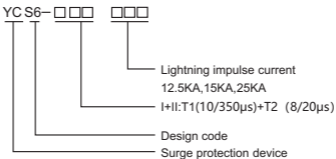
-  Before installing and using this product, please read this manual carefully and pay more attention to safety.

## 1. Usage and applicable range

- 1.1 YCS6 surge protection device (hereinafter referred to as "protection device") is applicable for TT, IT, TN-S, TN-C-S protect the power grid against thunder or surge over voltage.
- 1.2 Normal working conditions
  - 1.2.1 Altitud: 2000m below;
  - 1.2.2 Ambient air temperature: Normal range:  $-5\sim+40^{\circ}\text{C}$ , extending range:  $-40\sim+85^{\circ}\text{C}$
  - 1.2.3 Air relative humidity: 30%~90% at indoor temperature;
  - 1.2.4 Gradient corresponding to the vertical plane shall not exceed  $5^{\circ}$
  - 1.2.5 Placed in the location without obvious shake and impact;
  - 1.2.6 Placed in the medium without explosion danger, and the medium shall not include the gas or dust (contain conductive dust)that erodes the metal and destroys the insulation.

## 2. Model,specification and technical parameter

### 2.1 Model description



## 2.2 Variety & spec

Table 1 Variety & spec.of YCS6 series surge protection device

| Model & spec | Rated operating voltage (On) | Max continuous operating voltage $U_c$ (V) | Protection level UP(KV) | Max effective current $I_{max}$ (kA) | Nominal operating current $I_n$ (kA) | Response time ns | Operating environment |
|--------------|------------------------------|--|-------------------------|--------------------------------------|--------------------------------------|------------------|-----------------------|
| YCS6         | 220V/<br>380V                | 255/280<br>/385                            | $\leq 1.5$              | 25KA                                 | 12.5KA                               | <100             | -40→+85°C             |
| YCS6         |                              |  | $\leq 2.0$              | 25KA                                 | 12.5KA                               |                  |                       |
| YCS6         |                              |  | $\leq 2.5$              | 25KA                                 | 12.5KA                               |                  |                       |
| YCS6         |                              |  | $\leq 1.5$              | 25KA                                 | 15KA                                 |                  |                       |
| YCS6         |                              |  | $\leq 2.0$              | 25KA                                 | 15KA                                 |                  |                       |
| YCS6         |                              |  | $\leq 2.5$              | 25KA                                 | 15KA                                 |                  |                       |
| YCS6         |                              |  | $\leq 1.5$              | 25KA                                 | 25KA                                 |                  |                       |
| YCS6         |                              |  | $\leq 2.0$              | 25KA                                 | 25KA                                 |                  |                       |
| YCS6         |                              |  | $\leq 2.5$              | 25KA                                 | 25KA                                 |                  |                       |

## 2.3 Surge protector function

A surge protector is a spark gap protector designed for use in TN-S, TT, and IT systems between a neutral line and a protective ground body. Two layers of spark gaps are located inside the device and consist of multiple discs of high-energy graphite electrodes. The highly heat-resistant Teflon spacer reliably guarantees a precisely defined safety distance within the spark gap.

## 2.4 Remote-signaling contact

The protection device may be made into the variety with the remote-signaling contact that is a NO contact. If one or several modules of protection device are failure, the contact will close and transmit the fault information. The rating of remote-signaling contact is AC36V, 1A. Table 4 N-PE modules series parameters

### 3. Technical parameter

| Index  | Code | N-PE/12.5                          | N-PE/15 | N-PE/25 |
|--|------|------------------------------------|---------|---------|
| continuous operating voltage $U_c(V)$          |      | 255V/280V/385V                     |         |         |
| protection level $UP(KV)$                      |      | $\leq 1.5KV \leq 2.0KV \leq 2.5KV$ |         |         |
| Nominal operating current in 8/20 $\mu s$ (KA) |      | 25KV                               | 25KV    | 25KV    |
| Lightning impulse current 10/350 $\mu s$ (KA)  |      | 12.5KV                             | 15KV    | 25KV    |
| Response Time ns                               |      | < 100ns                            |         |         |
| Color  |      | Blue/Wie                           |         |         |

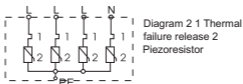
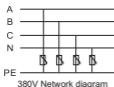
### 4. Main constitution and working principle

In three-phase four-wire system, the protection devices are distributed at the area of three phase wires with one neutral wire to earth wire (refer to diagram 1).

Under normal state, the protection device is at the high resistance state, when the power grid emergency surge over voltage for thunder or other reasons, the protection device will conduct within the nanosecond at once, and the surge over voltage is led to ground, so that it can protect the powered device at power grid.

When the surge voltage passes through the protection device and disappears, the protection device will resume high resistance state, so it can't influence normal working of power grid.

The electrical principle diagram of surge protection device is shown as diagram 2.



## **5. Installation**

5.1 The surge protector's housing size meets the space-saving 18mm width modulus requirement, so the device is easy to install. The lightning arrester can be easily installed by attaching it to the 35mm guide rail.

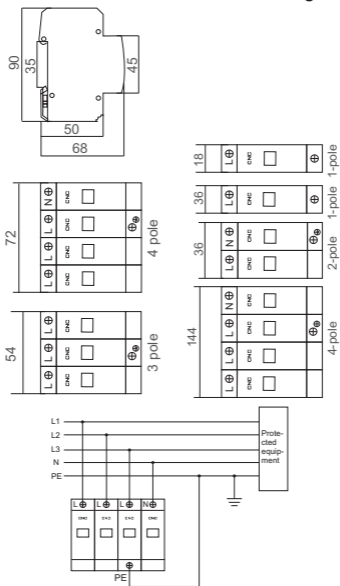
### **5.2 Characteristics**

1. Seal structure design, no arc leakage during operation;
2. modular design, integrated design, more beautiful appearance;
3. Iimp 12.5kA, 15kA and 25kA (10/350us), fast response time;
4. imported high energy graphite, stable performance, safe use;
5. 35mm standard rail installation.

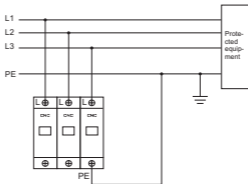
### **5.3 the use of advantages**

1. switch type modular surge protector, with high lightning current discharge capacity;
2. the unique use of sealed design structure, even in the operation, there will be no leakage arc;
3. the use of high safety, no continuous flow;
4. no grounding jumper, more convenient installation, more safe;
5. When used with the post-stage voltage limiting type surge arrester, the two-stage surge arrester can be installed together.

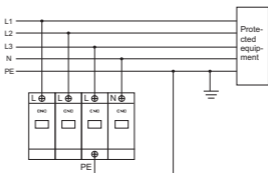
## 5.5 Outline & installation size is shown in diagram 5



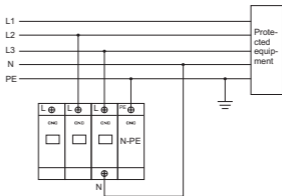
Wiring mode of TN-S power supply system



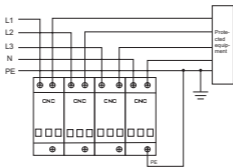
Wiring mode of TN-C power supply system



Wiring mode of TT power supply system



"3+1" wiring mode



Kevin wiring mode



## **6. Adjustment,use and maintenance**

- 6.1 It is needless to adjust the protection device after it has been mounted.
- 6.2 Only the protection device is installed appropriately, it can protect the poer grid automatically at once;
- 6.3 When the protection device is operating,the tablet ot module shall be examined regularly,to check if it glows,meanwhile,observe if the red indicator lamp of fuse brightens.Please change the fault element in time.

## **7. Notification of order**

- 1) Please specify the model and quantity when ordering.  
Example:LY1-C40 4P 100pieces
- 2) In the packing case,there shall be following documents when delivery.
  - One copy of certificate
  - One copy of ooperation manual
  - One copy of packing list.



# CERTIFICATE

Product Model: YCS6 Series

Standard: IEC 61643-1

Inspector : **CNC001**

Production date: Printed on the product  
or package.

This product is qualified according  
to the delivery inspection

**CNC ELECTRIC**

Tel: 0086-577-61989999 Fax: 0086-577-61891122

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