



DZ47sY | **NAVIGATOR Series**
Surge Protective Device |
User Manual



Please carefully read this User Manual before installing and operating the product, and keep this manual properly for future reference

Safety Notice

Please carefully read this manual before the installation, operation, run, maintenance, and inspection of the product, and install and operate this product properly according to the product instructions.



Danger:

- It is prohibited to operate the aux. contact and shunt contact with your wet hands;
- It is prohibited to touch the conductive part during operation;
- Make sure that the product is de-electrified during the maintenance and service;



Caution:

- The installation, maintenance, and service shall be carried out by the qualified professionals;
- Please confirm that the sustainable operating voltage, nominal discharge current, and voltage protection level of the product meet the working requirements;
- When the indicator window displays red, this indicates that the product is damaged and shall be replaced.
- The branch of the live line shall be connected with a fuse or circuit breaker in series for backup protection, and the earthing system shall be well connected.
- When the product is scrapped, please dispose the industrial waste properly. Thanks for your cooperation.

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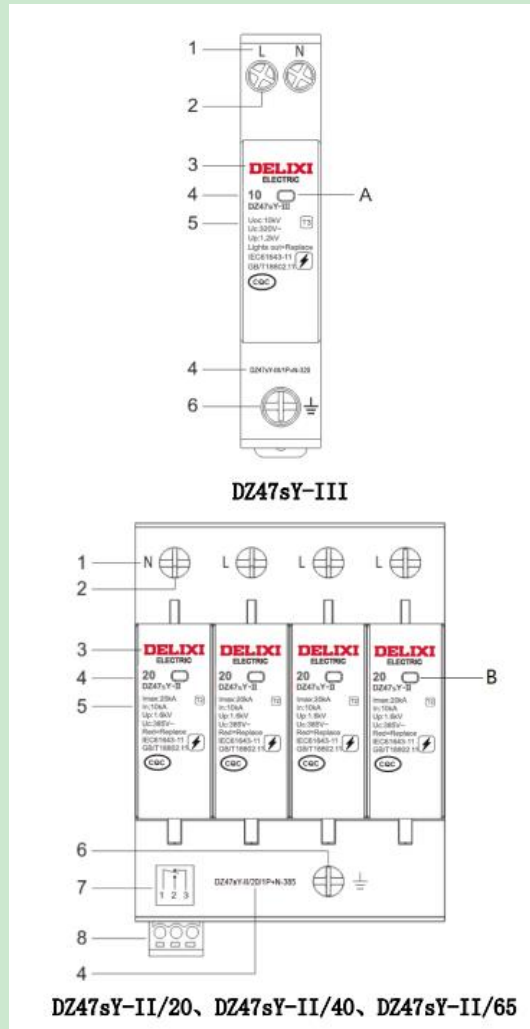
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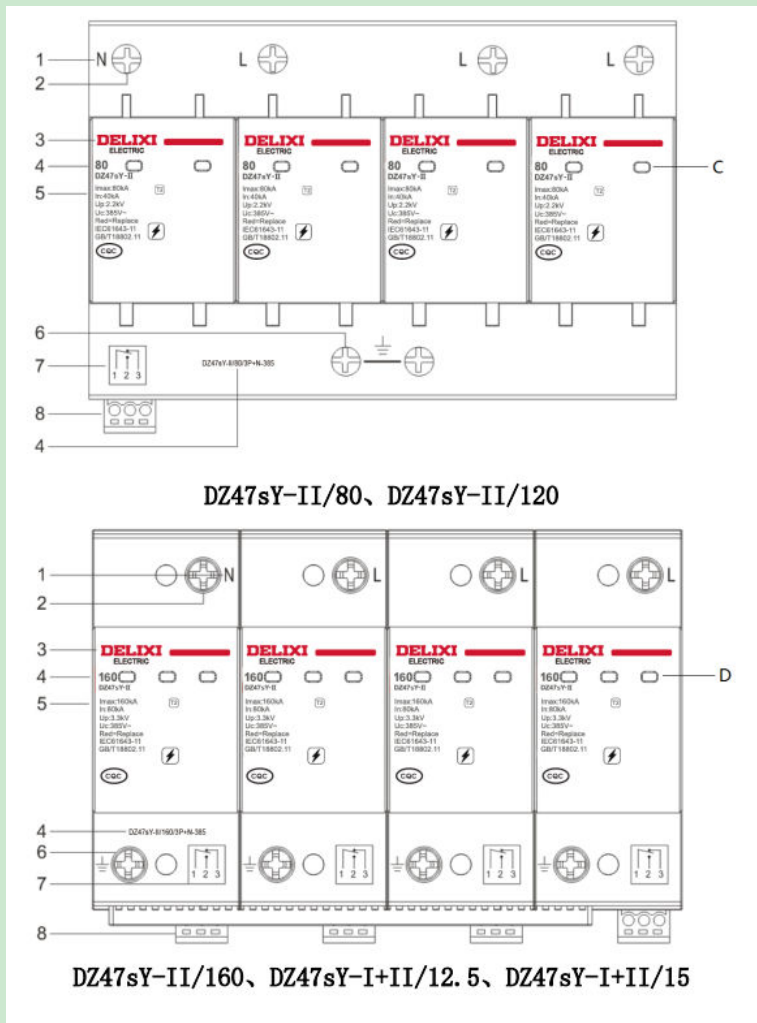
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1 Main Purposes and Scope of Application

DZ47sY series surge protective device (hereinafter referred to as SPD) is primarily used in AC 50Hz/60Hz single-phase/three-phase power distribution system with the rated voltage of 230V/400V to suppress transient overvoltage, discharge surge energy, and prevent or reduce the damage to the equipment due to transient overvoltage caused by lightning strike or operation.

2 Product Panel Introduction





Legends:

- 1. Wiring symbol 2. Inlet terminal 3. Delixi brand 4. Product model
- 5. Main technical parameters: I_n - Nominal discharge current, I_{max} - Max. discharge current, U_p - Voltage protection level, U_c - Max. continuous operating voltage, U_{oc} - Open circuit voltage, I_{imp} - Impulse current
- 6. Outlet terminal 7. Remote signaling terminal wiring diagram 8. Remote signaling terminal

Work status indicator window:

- A: If the green light is on, this means that the lightning protection function is normal; if the green light is off, this means that the lightning protection function is invalid.
- B: Green means that the lightning protection function is normal, and red means that the lightning protection function is invalid.
- C: Green means that the lightning protection function is normal, and red means that the lightning protection function is invalid.
- D: Colorless means that the lightning protection function is normal, and red means that the lightning protection function is invalid.

3. Normal Operation, Installation and Transportation Conditions

3.1 Normal operation and installation conditions

- (1) Operating temperature: -40°C~ +80°C;
- (2) The altitude at the installation site does not exceed 2000m;
- (3) The relative humidity of the atmosphere air does not exceed 50% at the max. ambient temperature of +40°C, and a higher relative humidity is allowed at lower temperatures, such as 90% at 20°C.

Note: The surface of the product should be free from condensation, otherwise protective measures shall be taken;

- (4) Installed in a place where there is no rain or snow attack;
- (5) Pollution degree: Level 2, Level 3;
- (6) Installation category: Class II, Class III, Class IV;
- (7) Protection grade: IP20 (IP40 if installed in a power distribution tank, and a power distribution cabinet or box).

3.2 Normal storage and transportation conditions

- (1) The ambient air temperature is -20°C~ +60°C, and the ultimate temperature is -40°C~ +70°C;
- (2) Relative humidity: 30% ~90% at room temperature;
- (3) Please handle the product gently during transportation, and do not upside it down and prevent severe collision.

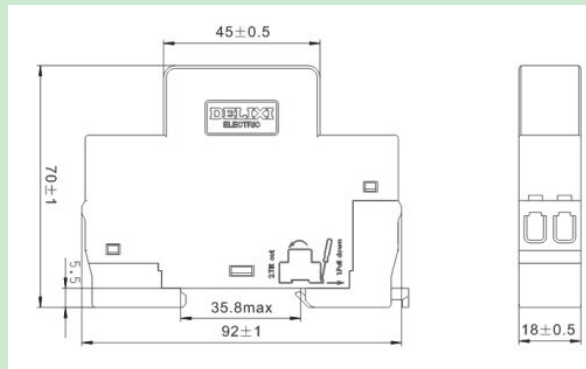
4 Technical Characteristics

4.1 Main technical parameters

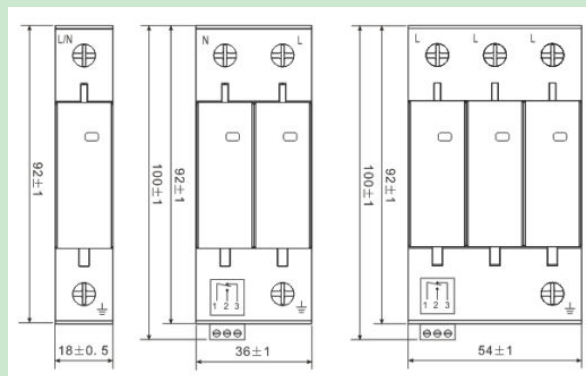
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|---|----------------------------|------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| Standard | GB/T18802.11/IEC61643-11 | | | | | | | | |
| Rated voltage U ₀ | 230VAC (Phase voltage) | | | | | | | | |
| Number of poles | 1P, 2P, 3P, 4P, 1P+N, 3P+N | | | | | | | | 1P+N |
| Model | DZ47sY-I+II | | DZ47sY-II | | | | | | DZ47sY-III |
| Test category | T1+T2 | | T2 | | | | | | T3 |
| Waveform μs | 10/350 | | 8/20 | | | | | | 1.2/50 |
| Impulse current I _{imp} | 12.5kA | 15kA | / | / | / | / | / | / | / |
| Nominal discharge current I _n | 25kA | 25kA | 10kA | 20kA | 30kA | 40kA | 60kA | 80kA | / |
| Max. discharge current I _{max} | 50kA | 50kA | 20kA | 40kA | 65kA | 80kA | 120kA | 160kA | / |
| Open circuit voltage U _{oc} | / | / | / | / | / | / | / | / | 10kV |
| Max. continuous operating voltage U _c ~ | 275V/385V/440V | | | | | | | | |
| Voltage protection level U _p kV | 1.6/2.0/2.2 | | 1.3/ 1.6/ 1.8 | 1.5/ 1.8/ 2.0 | 1.6/ 2.0/ 2.2 | 1.8/ 2.0/ 2.2 | 2.2/ 2.5/ 2.5 | 3.2/ 3.3/ 3.4 | 1.2 |

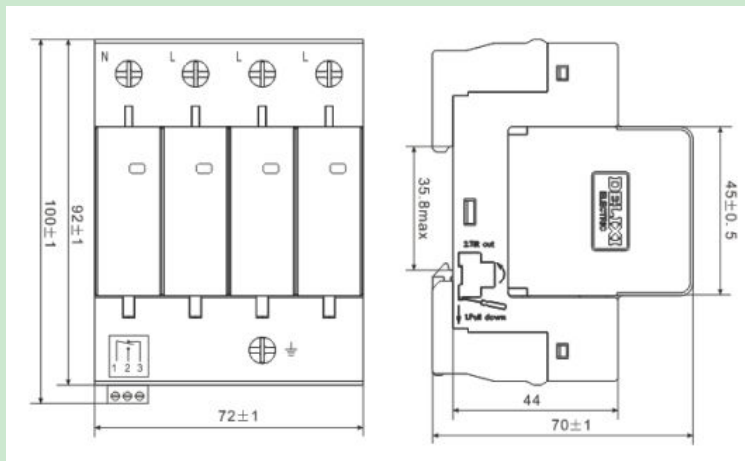
| | | | | | | | | | |
|---|--|---|---------------------------|---------------------------|---------------------------|---------------------------|--------------|------|---|
| Work status indicator window | Colorless: Normal state Red: Invalid and replace | Green: Normal state Red: Invalid and replace | | | | | | | Green light ON: Normal state Green light OFF: Invalid and replace |
| Recommend special backup protection device for surge protection device, SCB | 150kA (10/350) | | $\geq 20\text{kA}$ (8/20) | $\geq 40\text{kA}$ (8/20) | $\geq 65\text{kA}$ (8/20) | $\geq 80\text{kA}$ (8/20) | 120kA (8/20) | / | / |
| Recommended backup protection circuit breaker | / | / | 25A | 40A | 63A | 100A | 125A | / | / |
| Recommended backup protection fuse gL | 250A | 250A | 50A | 100A | 125A | 160A | 200A | 250A | Built-in fuse in the L pole |
| Response time | <25ns | | | | | | | | |
| Remote signaling accessory (optional) | 11 is common terminal, 12 is normally open and 13 is normally closed; operating voltage $\leq 125\text{V}$ /switching current $\leq 1\text{A}$; wiring capacity 0.5-1.5 mm ² ; in the event of fault, 12 normally open contact is closed and 13 normally closed contact is open to issue a warnign signal. | | | | | | | | / |
| Wiring capacity | Hard wire $\leq 35\text{ mm}^2$; soft ware 2.5-25 mm ² ; ultimate torque 3.5 N.m | | | | | | | | Hard wire $\leq 16\text{ mm}^2$, Soft wire 2.5-10mm ² Ultimate torque 2N.m |
| Protection grade | IP20 | | | | | | | | |

5 Outline and Installation Dimensions

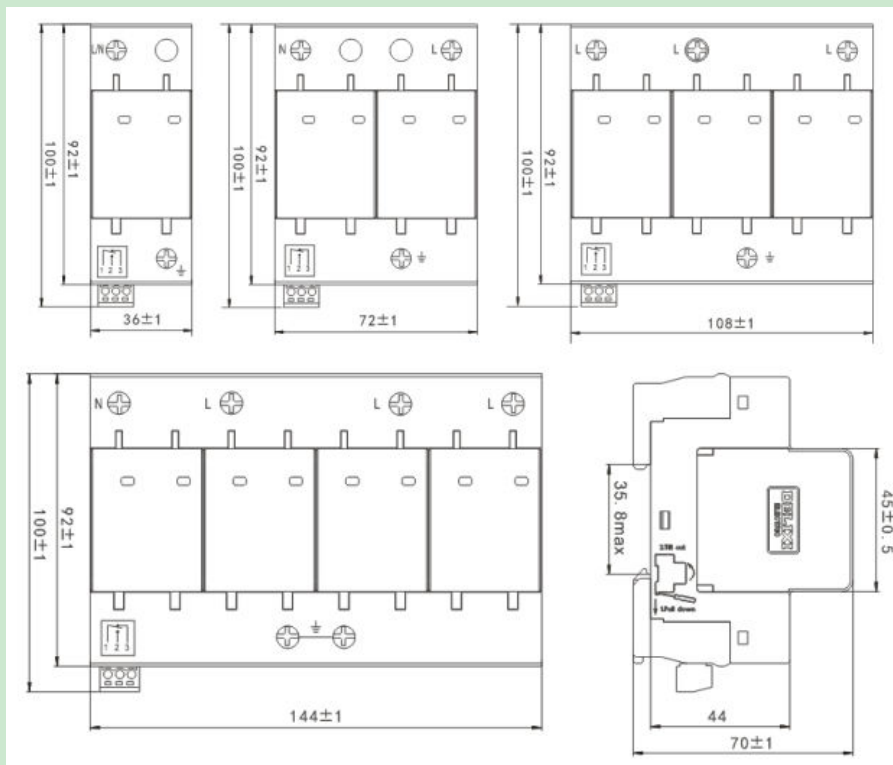


DZ47sY – III outline and installation dimensions

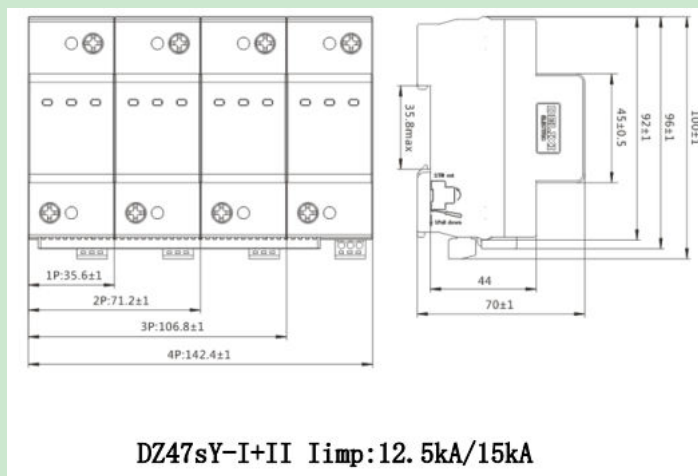




DZ47sY-II I_{max}: 20kA/40 kA/65 kA outline and installation dimensions



DZ47sY-II I_{max}: 80kA/120 kA outline and installation dimensions



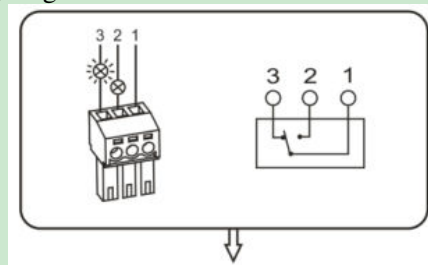
DZ47sY-I+II I_{imp}: 12.5kA/15kA

6 Installation and Operation (Maintenance)

6.1 Installation

This series of surge protective device is of the rail mounted type, suitable for TH35-7.5 steel mounting rails;

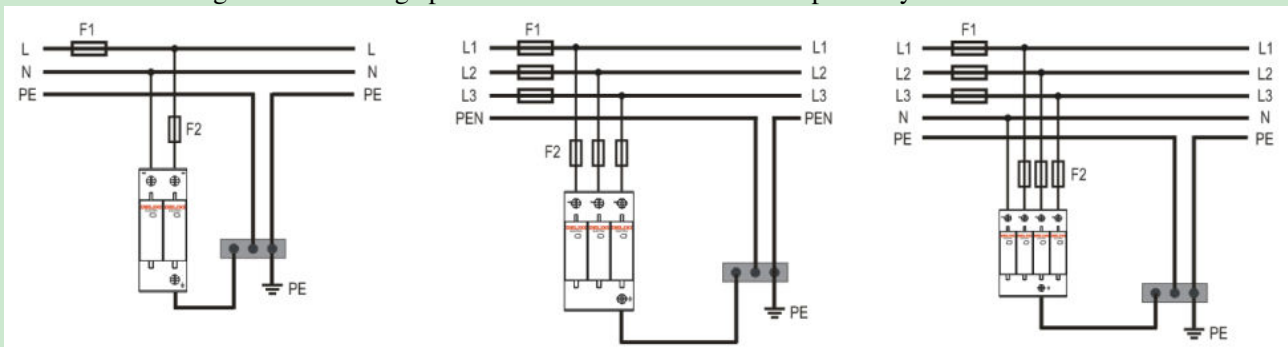
- Remote signaling function wiring diagram



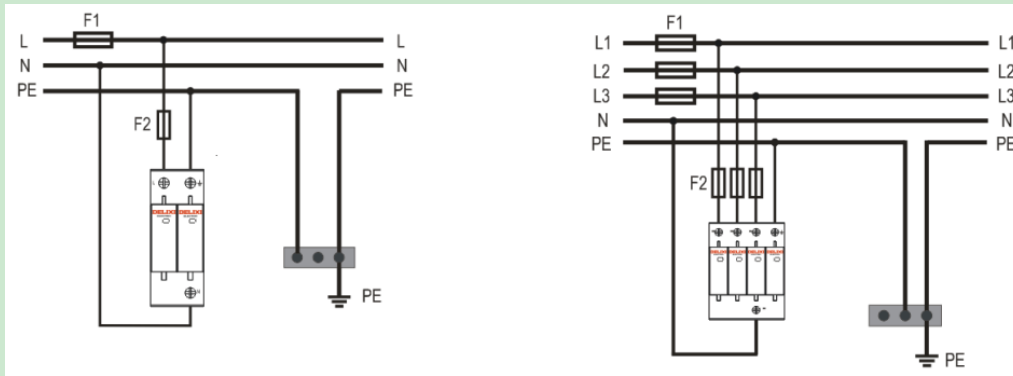
Wiring capacity: 1.5mm² (max)

U_{max}: AC125V I_{max}: 1A

- Before installation, check whether the technical parameters of the product meet the requirements and whether the product is damaged;
- Please connect the wire according to the transfer printing mark;
- The recommended cross-sectional area of the connecting wire is as follows: $\geq 6 \text{ mm}^2$ for the live/neutral line; $\geq 16 \text{ mm}^2$ for the wire from the power distribution box to the earthing bar;
- Installation diagrams of the surge protective devices in the different power system:



TN-S system 2P, 3P, 4P installation diagrams



TT system 1P+N, 3P+N installation diagrams

6.2 Maintenance and Service

- Maintenance and service must be carried out by professionally qualified personnel;
- Make sure that the product is not electrified during maintenance and service;
- Maintenance and service are required before and after the thunderstorm season and after the lightning stroke, and the maintenance contents are listed in table below.

Maintenance and Service

| Item | Contents |
|---------------------------|--|
| Appearance | <ul style="list-style-type: none"> ◆ No dust, no condensation, and clean if necessary ◆ No damage ◆ The color of the housing and connecting terminal is not changed ◆ If the indicator window shows red (or the indicator light is off), this means that the product is damaged and shall be replaced immediately; |
| Terminal block connection | <ul style="list-style-type: none"> ◆ Tighten it according to the torque 3.5 N.m without looseness. ◆ Tighten the N terminal of the DZ47sY-III L according to the torque 2.0 N.m without looseness; tighten the earthing terminal according to the torque 3.5 N.m without looseness. |

7 Unpacking Inspection

After unpacking, please check the product for damage, the exposed metal for rust, and the product for defects caused by poor transportation or storage. If found any of above situations, please stop the product, and contact the supplier timely for solution.

8 Company' commitment

The free repair or replacement will be provided by the company for damage or abnormal operation of the product produced by our company due to poor manufacturing quality within 36 months from the date of the production under the premise that the user conforms to the operation and storage conditions and that the product is well sealed. A paid repair is provided when the warranty period expires. However, the paid repair is provided for damage caused by one of the following situations even within the warranty period:

- Poor operation, maintenance, or storage;
- Modification without permission, or improper maintenance;

- c) Damage caused by falling off after purchase or occurred during the installation process;
 - d) Irresistible nature disasters such as earthquakes, fires, lightning strikes, and abnormal voltages.
- Please contact the dealer or the company's customer service department if you have any questions. Customer service hotline: 400-826-8008



Certificate

DELIXI ELECTRIC LTD

Name: Surge protective device

Model: DZ47sY

This product passes the inspection and is allowed to be shipped.

Standard: GB/T 18802.11

Inspector: Check 02

Date of production: See the label on the inner box



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P.C.: 325604

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Customer service hotline: 400-826-8008

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