

## Surge Current Suppressor

- NTC surge current suppressor working principle: Based on the characteristics of NTC thermistor, when the LED driver is switched on, an inrush current is generated, the NTC has a high resistance value at room temperature to suppress the inrush current, when the NTC heats up, the resistance value drops rapidly, reducing its own power consumption.
- Used in series with triac dimmer to protect the safety and stable operation of triac dimmer.
- High sensitivity, small size, high reliability, low cost, easy to install and use.

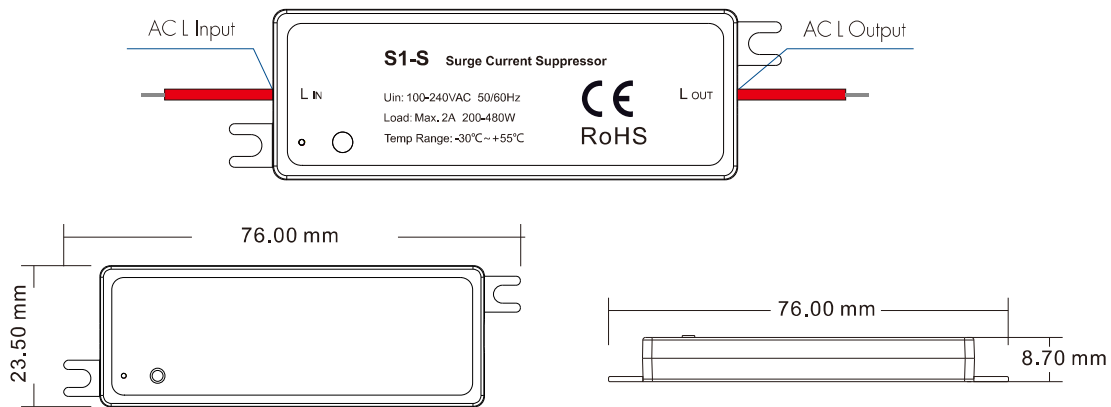


CE RoHS

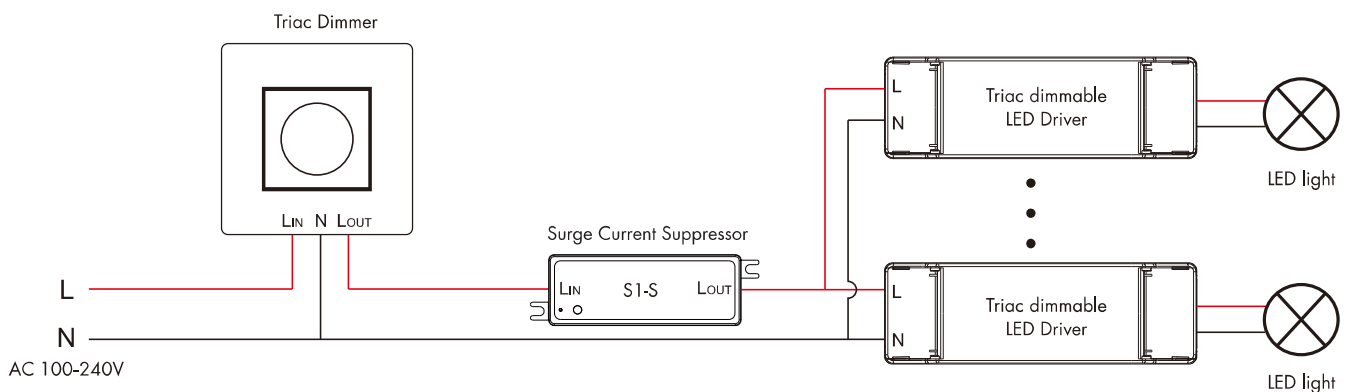
### Technical parameters

Input and Output		Environment		Safety and EMC	
Input voltage	AC100-240V	Operation temperature	Ta: -30°C ~ +55°C	EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3
Input supply frequency	50/60Hz	Case temperature (Max.)	Tc: +85°C		ETSI EN 301 489-17 V3.2.4
Work current	Max. 2A	IP rating	IP20	Safety standard	EN 62368-1:2020+A11:2020
load power	200-480W	<b>Package</b>		Radio Equipment(RED)	ETSI EN 300 328 V2.2.2
<b>Warranty</b>		Size	L90 x H130mm	Certification	CE,EMC
Warranty	5 years	Gross weight	0.021kg		

### Mechanical structures and installations



### Wiring diagram



**Note:**

1. The surge current suppressor can be mounted in front of or behind the triac dimmer.
2. The surge current suppressor can be connected to one or more triac dimmable LED drivers or LED dimmable luminaires, and it is recommended that the total power of the load does not exceed 400W and the total working current does not exceed 2A.

## NTC surge current suppressor working principle

Surge current formula:  $I_{surge} = U / (U / I_{original\ surge} + R_{NTC})$

When the AC voltage is 220V, the peak voltage U is  $220 * 1.414 = 311V$ , if the original surge current is 100A.

When the working temperature is 25°C,  $R_{NTC}$  is 2.5Ω .

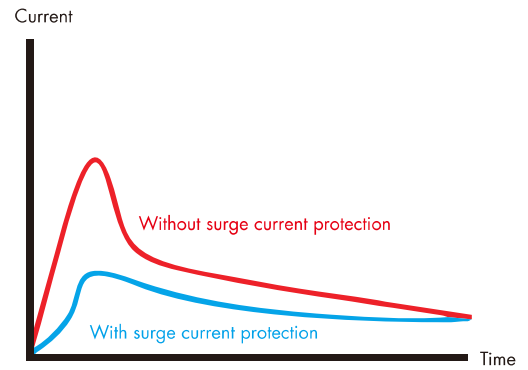
$$I_{surge} = 311 / (311 / 100 + 2.5) = 55.4A$$

That is, after using the surge current suppressor, the input surge current of the triac dimmer drops to 55.4A.

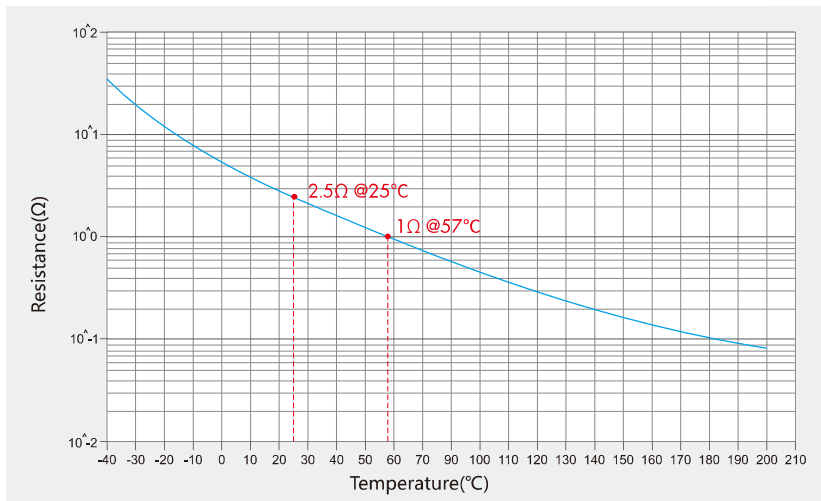
When the working temperature increases, the surge current suppression capability will decrease.

Example: When the working temperature is 57°C,  $R_{NTC}$  is 1Ω.

$$I_{surge} = 311 / (311 / 100 + 1) = 75.7A$$



Temperature-Resistance Curve



### Note:

- Suppression effect of NTC surge current suppressor is related to ambient temperature.  
Temperature changes may affect its current limiting effect, and the temperature can be stabilised by other auxiliary measures.
- For larger inrush currents, a single NTC surge current suppressor may not be able to fully limit the current.  
The solution is to use multiple cascades to enhance the suppression effect.
- As NTC surge current suppressor work in high temperature environments for long periods of time, problems such as aging and failure may occur.  
The solution is to test and replace the NTC surge current suppressor periodically.