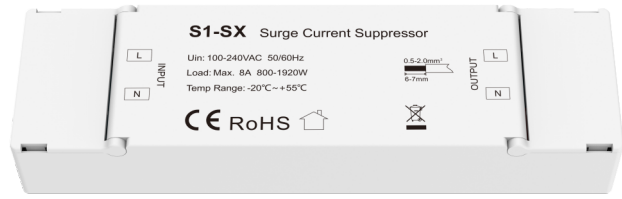# S1-SX

Triac

Surge Current Suppressor

- Maximum working current is 8A,
  and inrush current can be suppressed to a maximum of 20A.
- Built-in bypass relay.
- Built-in thermal fuse for thermal protection.
- Used to reduce the high start-up current generated
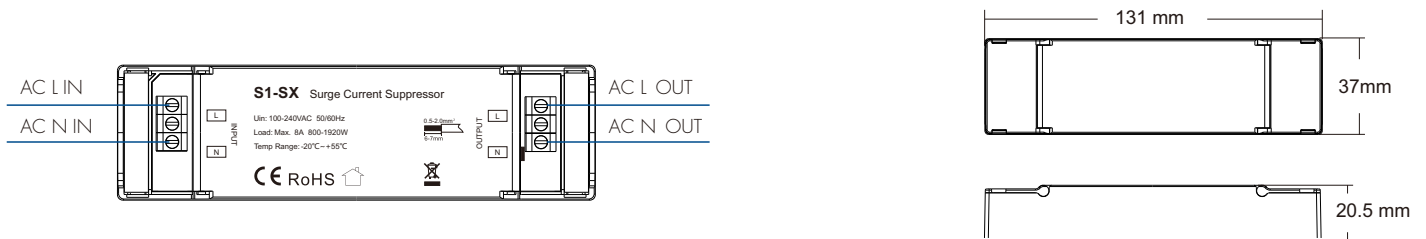 by loads such as LED dimming drivers and LED dimmable lamps.

CE RoHS emc

Technical Parameters

Input and Output		Environment		Safety and EMC	
Input voltage	AC100-240V	Operation temperature	Ta: -20℃ ~ +55℃	EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4
Input supply frequency	50/60Hz	Case temperature (Max.)	Tc: +85℃		
Work current	Max. 8A	IP rating	IP20	Safety standard	EN 62368-1:2020+A11:2020
Load power	800-1920W	**Package**		Radio Equipment(RED)	ETSI EN 300 328 V2.2.2
Warranty		Size	L135xW40xH23mm	Certification	CE, EMC
Warranty	5 years	Gross weight	0.095kg		

Mechanical Structures and Installations

AC L IN
AC N IN

S1-SX Surge Current Suppressor
Uin: 100-240VAC 50/60Hz
Load: Max. 8A 800-1920W
Temp Range: -20℃~+55℃

AC L OUT
AC N OUT

131 mm
37mm
20.5 mm

Wiring diagram

1. Surge current suppressor connect with one or more LED dimmable drivers

L
N
AC 100-240V

Surge Current Suppresspr

LED dimmable driver — LED light

LED dimmable driver — LED light
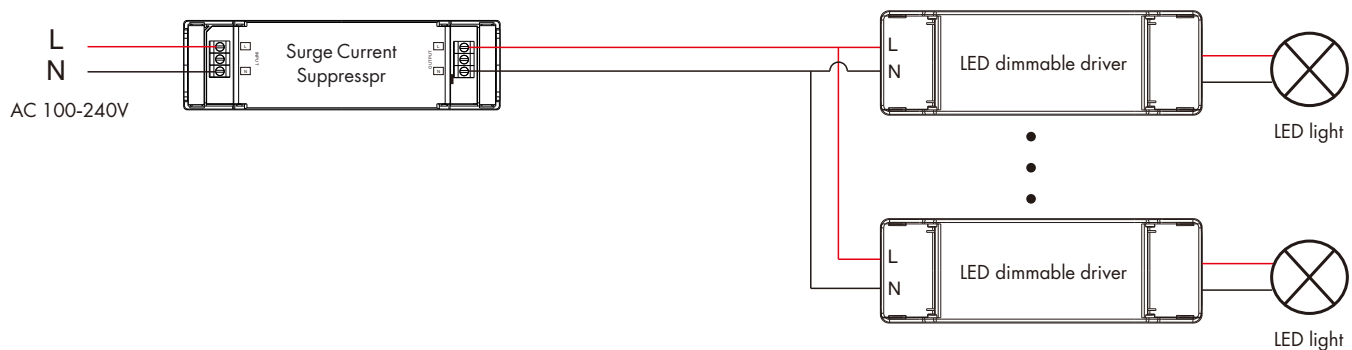
2. Surge current suppressors for use in series with triac dimmers to connect one or more triac dimmable LED drivers

L
N
AC 100-240V

L IN   N   L OUT

Triac Dimmer

Surge Current Suppresspr

Triac dimmable LED driver — LED light

Triac dimmable LED driver — LED light
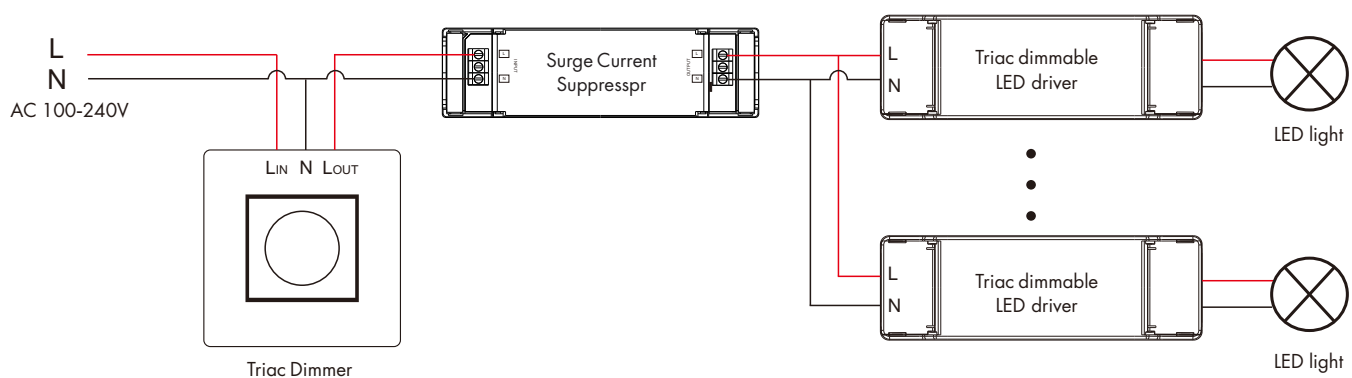
Note: It is recommended that the total power of the connected LED dimmable drivers or LED dimmable luminaires load does not exceed 2000W and the total working current does not exceed 8A.

Surge current suppressor working principle
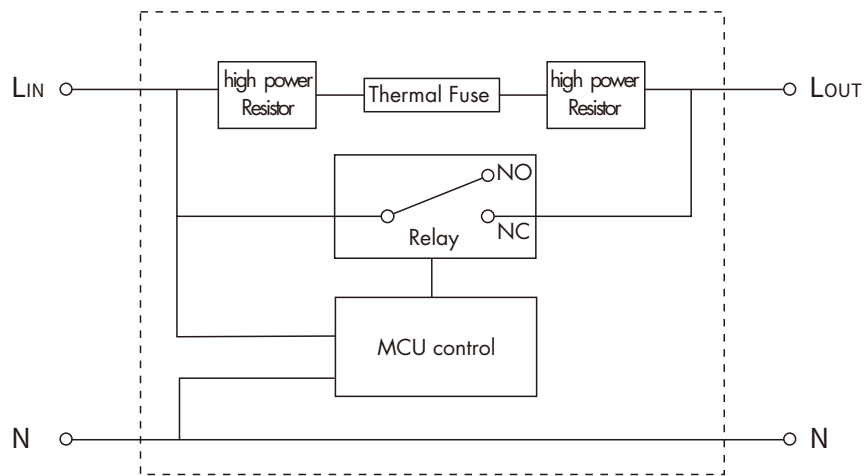
The moment the product is powered up, two 7.5Ω high power resistors are connected in series between L_{IN} and L_{OUT} to reduce the load power-on surge current. After about 40ms, the relay switch will be engaged and the L_{IN} and L_{OUT} will go through.

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

When the AC voltage is 220V, the peak voltage U is 220*1.414 = 311V, if the original surge current is 100A.
$I_{surge} = 311/(311/100+15) = 17.2A$
That is, after using the surge current suppressor, the surge current drops to 17.2A.

The internal thermal fuse provides thermal protection in case of MCU control or relay switching failure.