



## Surge Protective Device

### Paperless Datasheet

Going green and protecting environment is manufacturers' responsibility. Each WatchfulEyE product has a link of downloading data sheet on its enclosure:  
<http://datasheet.watchfuleyesolutions.com/US121065.html>

### Model & Ordering Code

| Model              | Ordering Code | LED Status Indicator | UPC/EAN Code     |
|--------------------|---------------|----------------------|------------------|
| WTH-SG/TL20PG-320  | US121065      | NO                   | (0) 811914031826 |
| WTH-SG/TL20PG-320L | US121066      | YES                  | (0) 811914031833 |



WTH-SG/TL20PG-320



WTH-SG/TL20PG-320L

### Certificates of Products



LISTED  
E345944



RoHS

IEC61643-11



## Surge Protective Device

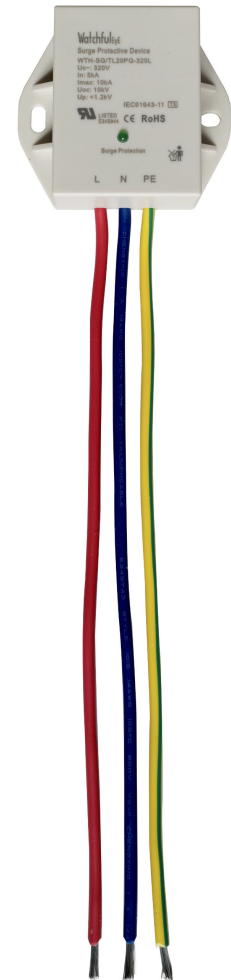
### Description

WTH-SG/TL20PG-320(L) series surge protective device, with MOV+GDT surge protection structure on each line, there is no leakage current between line and ground, avoiding risk of aging or fire due to increased leakage current caused by surge protectors being long-term online. There's full protection mode between line and ground, the residual voltage between any two points is reduced to the lowest level.

Applications: LED driver, precision instruments; for any other device which requires fine surge protection, its front terminal can also be directly soldered to the PCB board.

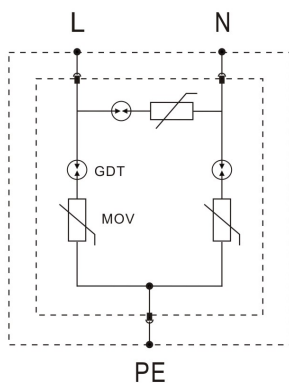
### WTH-SG/TL20PG-320(L) Series Technical Data

|   |                                 |
|---|---------------------------------|
| Nominal Voltage Rating                  | 120V, 240V, 277V                |
| Frequency                               | 50/60Hz                         |
| LED Protection Level                    | Class I                         |
| Max. continuous operating voltage (Uc)  | 320V                            |
| Requirement Class to IEC61643-11        | Class III / Type 3              |
| IEEE Category Rating                    | A                               |
| Nominal Discharge Current (In)          | 5kA                             |
| Max. Discharge Current (Imax, Per Line) | 10kA                            |
| Open circuit voltage (Uoc)              | 10kV                            |
| Voltage protection level (Up)           | 1.2kV                           |
| Residual voltage Ures @4kV(1.2/50μs)    | 1.0kV                           |
| Protection Modes                        | L-PE, N-PE, L-N                 |
| Connection                              | Parallel                        |
| Protective Element                      | MOV+GDT                         |
| Follow Current (If)                     | NO                              |
| Response Time (tA)                      | <100ns                          |
| Leakage Current (at 75%U1mA)            | None                            |
| Thermal Protection                      | YES                             |
| Protection Rating (IP Code)             | IP 65 (Option: IP 67)           |
| Back-up Fuse                            | NO                              |
| Surge Life at 1kA (8/20μs)              | >2000 events                    |
| Temperature Range                       | - 40°F to 176°F (-40°C to 80°C) |
| Relative Humidity                       | 0% to 95% noncondensing         |
| Maximum Operating Altitude              | 10,000 feet (3000m)             |
| Housing Material                        | Thermoplastic (UL94 V-0, f1)    |
| Net Weight Per Unit                     | 71g                             |
| Package Dimension (W×H×D)               | 62mm×53mm×37mm                  |

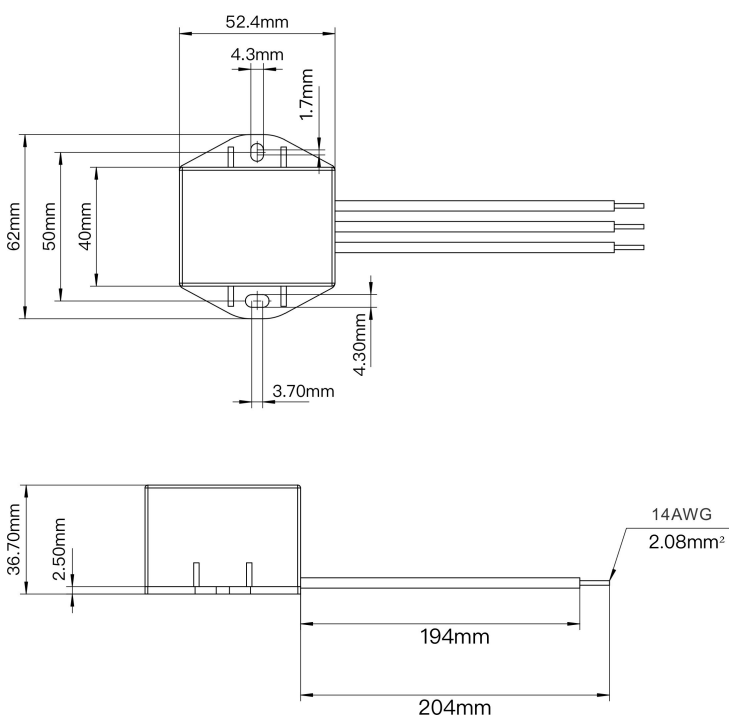


## Surge Protective Device

### Surge Protection Connection Diagram



### Dimensions





## Surge Protective Device

### FAQ & Help (1/2)

1. What should I do if I can't find the paper manual in the product packaging?

Watchful Eye products is committed to going green with paperless data sheets. On the left side of each product enclosure is an engraved link with URL for downloading paperless data sheet and QR code of the website. If you need the paper data sheet, you can open the link and print the data sheet by yourself.



2. The advantages of LED status indicator?

If surge protection fails, the LED status indicator will be off, thus it can be seen intuitively, and the SPD can be replaced in time to avoid damage to the equipment caused by a second surge.

3. Can the length of the wire be customized?

Yes, the length of the wire can be customized, please specify in the order

4. Optional IP67, can I operate the order as following?

Please specify in the order (Note: IP67 refers to fully glue filling, which will increase the weight of the product)

5. Model WTH-SG/TL20PG-320 has no status indicator. What instruments can be used to test whether its surge protection function is normal or not?

Test with a Watchful Eye surge protector tester

6. Can you list more applications?

LED driver, network switches, computers, servers, air conditioners, refrigerators, inverters, precision instruments or other equipment which require fine surge protection, its front ends can also be integrated into the power supply module of the device or directly soldered to the PCB board during product production; further more, it can be directly connected in parallel in the terminal distribution box or wall switch

7. What is UL f1 standard for housing materials?

UL f1 standard requires housing materials be UV and acid rain resistant and can be used in outdoor environments

8. What are the advantages of MOV+GDT type surge protection?

No leakage current, slowing down the aging of MOV, avoiding the risk of burning or explosion caused by the increase of leakage current due to MOV aging.

9. What are the advantages of L-PE, N-PE, L-N full protection mode?

Finer protection, the residual voltage between each line is kept balanced, reducing the risk of surge voltage differences on equipment, which is crucial for precision instruments and other equipment, and key protection equipment in railways and other special industries, etc.



## Surge Protective Device

### FAQ & Help (2/2)

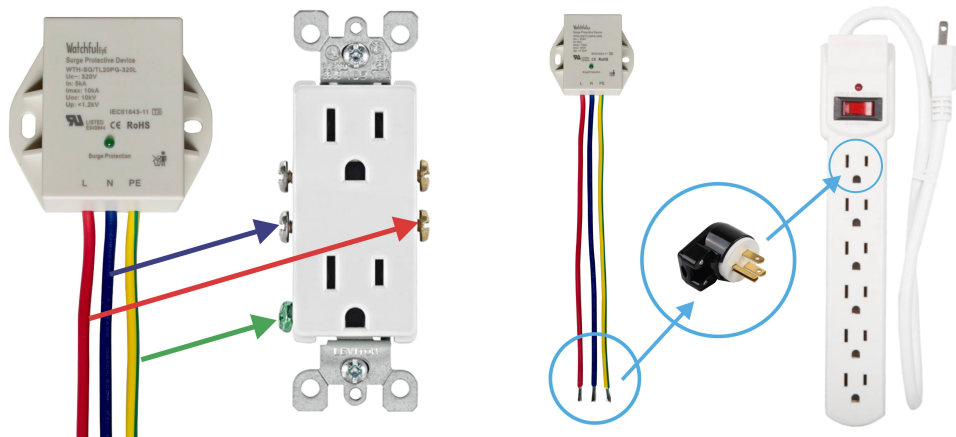
10. What are the specifications of the outgoing wires?  
UL certified wires, specification: 14AWG (2.08mm<sup>2</sup>)

11. How long is the stripping length at the top of the wire?  
Stripping length: 10mm

12. How are the three wires wired?

There are clear marking of wiring methods on the product, red wire: L wire (fire wire), blue wire: N wire (zero wire), yellow-green wire: PE (ground wire).

13. Application





## Surge Protective Device

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### Download WatchfulEye Official App

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### After-sale Services

Watchful Eye provides a 5-year quality warranty globally.

[I have a question](#)