



(Only SPD-20HP-277S)



us



IP66



## Features

- Series connection style
- UL1449 type 4 component assemblies
- Line to Ground & Line to Line protected
- 20kA maximum discharge current( $I_{max}$ ), 8/20 $\mu$ s
- Low MLV/ $U_p$
- Thermally protected
- Double insulation cable wire
- LED status indicator
- IP66 design for indoor or outdoor installations
- Suitable for LED driver surge protection with class I insulation
- 20KV surge protection capability

## Applications

- Outdoor and commercial LED Lighting
- Roadway lighting
- Traffic lighting
- Digital signage
- Wall wash lighting
- Parking garage/lot lighting
- Flood lighting
- Tunnel lighting
- Street lighting

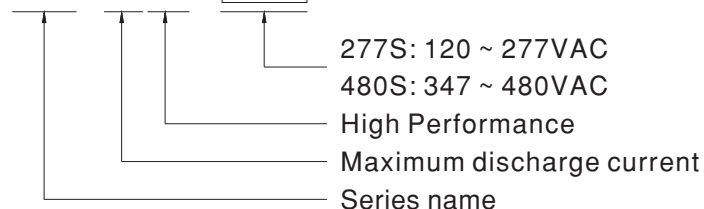
## Description

SPD-20HP thermally protected Surge Protective Device is a self-protected device which is specially designed to be used in outdoor and commercial LED lighting fixtures for transient overvoltage protection. It is constructed with thermally protected varistor technology. Its built-in thermal disconnect function provides additional protection to prevent catastrophic failure and fire hazard even under the extreme circumstances of varistor end-of-life or sustaining over voltage conditions.

The SPD-20HP provides coordinated surge protection with more LED drivers than other SPDs due to its exceptionally low Measured Limiting Voltage (MLV) and Voltage Protection Level ( $U_p$ ). This lower clamping voltage can also help to extend the life-time of the luminaire. It also features a built-in LED indicator that notifies when replacement of the module is needed.

## Model Encoding

**SPD - 20 HP - 277S**



## SPECIFICATION

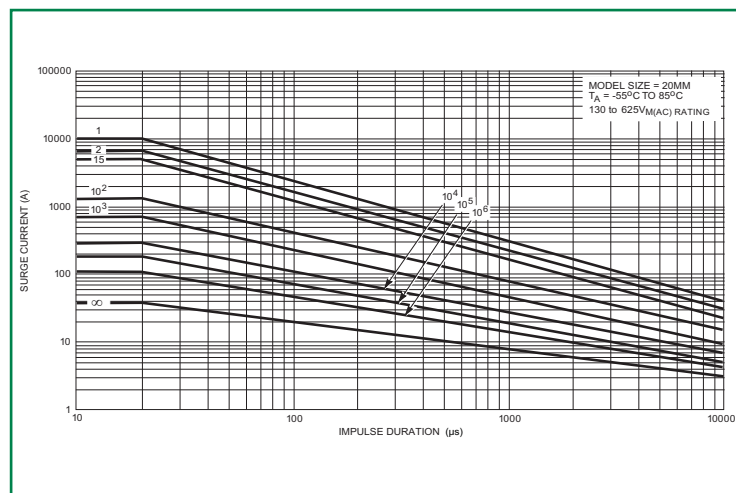
| MODEL                                                                            | SPD-20HP-277S                                                      | SPD-20HP-480S                                                        |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|
| OPERATING VOLTAGE                                                                | 120 ~ 277VAC 50/60Hz                                               | 347 ~ 480VAC 50/60Hz                                                 |
| MCOV/U <sub>c</sub><br>(MAX. CONTINUOUS OPERATING VOLTAGE) <small>Note.1</small> | 320VAC                                                             | 510VAC                                                               |
| CONTINUOUS CURRENT (max.)                                                        | 5A                                                                 | 5A                                                                   |
| MLV<br>(MEASURED LIMITING VOLTAGE) <small>Note.2</small>                         | L-N: 810V<br>L-G: 1560V<br>N-G: 1570V                              | L-N: 1400V<br>L-G: 1560V<br>N-G: 1570V                               |
| U <sub>p</sub><br>(VOLTAGE PROTECTION LEVEL) <small>Note.3</small>               | L-N: 1000V<br>L-G/PE: 3800V<br>N-G/PE: 2900V                       | -----                                                                |
| I <sub>n</sub> (NOMINAL DISCHARGE CURRENT) <small>Note.4</small>                 | 10kA, 8/20μs                                                       |                                                                      |
| I <sub>max</sub> (MAX. DISCHARGE CURRENT) <small>Note.5</small>                  | 20kA, 8/20μs                                                       |                                                                      |
| OPERATING TEMPERATURE                                                            | -40 ~ +75°C                                                        |                                                                      |
| SAFETY STANDARDS                                                                 | UL1449(Fourth Edition), BS EN/EN61643-11, EAC TP TC 004 approved   | UL1449(Fourth Edition), EAC TP TC 004 approved                       |
| DIMENSION                                                                        | 71.6*67.7*32 (L*W*H)                                               |                                                                      |
| PACKING                                                                          | 0.233Kg/Unit ; 1.67Kg/one box(6pcs); 9Kg/carton(including 5 boxes) | 0.243Kg/Unit ; 1.73Kg/one box(6pcs); 9.3Kg/carton(including 5 boxes) |

**NOTE:** 1. MCOV/U<sub>c</sub>: Maximum Continuous Operating Voltage - maximum r.m.s. voltage that could be continuously applied to the SPD.  
2. MLV: UL1449 Measured limiting voltage; the highest value of residual voltage measurements during the application of impulses of 8/20μs nominal discharge current (I<sub>n</sub>); an average voltage value of 15 impulses.  
3. U<sub>p</sub>: IEC 61643-11 Voltage protection level; the highest value of residual voltage measurements during the application of impulses of 8/20μs nominal discharge current(I<sub>n</sub>); a rounding voltage value of maximum measurement.  
4. Nominal Discharge Current I<sub>n</sub> (A): The nominal discharge current is a measure of the SPDs endurance capability; 15 impulses of discharge current uses the 8/20μs current waveform.  
5. Maximum Discharge Current I<sub>max</sub> (A): The maximum discharge current is a measure of the SPDs maximum capability; single impulse of discharge current uses the 8/20μs current waveform. All Devices pass maximum discharge current with possible, safe opening of thermal disconnect.  
※ Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

## SPECIFICATION for SPD-20HP-277S only

| SPECIFICATION                                                   | Value                 | Condition                                                                        |
|-----------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------|
| Temporary Overvoltage (V)<br>TOV UT @ t <sub>r</sub> = 5s       | 403VAC                | LV System Fault for TN power Grid                                                |
| Temporary Overvoltage (V)<br>TOV UT @ t <sub>r</sub> = 120 min. | 529VAC                | LV System Fault for TN power Grid                                                |
| Power grids                                                     | TN                    |                                                                                  |
| Backup fuse (A)                                                 | 21A                   | Maximum gG Fuse                                                                  |
| End of life indication                                          | Yes                   | Optical<br>Light ON: SPD is functional<br>Light OFF: SPD has reached end-of-life |
| Max earth leakage current at U <sub>c</sub> (μA)                | 50                    |                                                                                  |
| IEC 61643-11 Test Classification                                | Test Class II and III |                                                                                  |
| BS EN/EN61643-11 Type Classification                            | Type 2 and 3          |                                                                                  |
| UL 1449 Type                                                    | 4CA                   |                                                                                  |

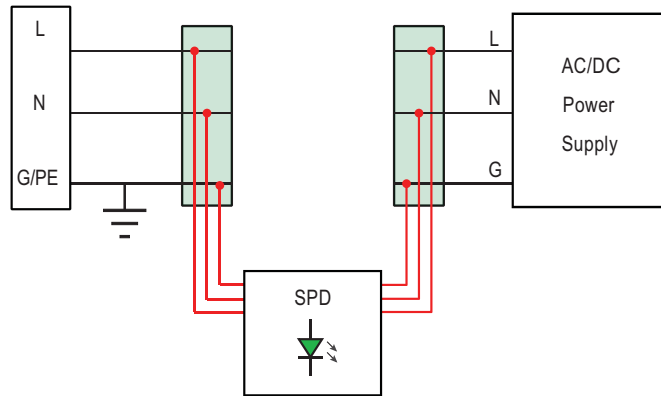
## Repetitive Surge Capability



| Pulse Rating<br>(8x20μ Sec) |         |
|-----------------------------|---------|
| Strikes                     | Surge   |
| 1                           | 20,000A |
| 2                           | 15,000A |
| 15                          | 10,000A |
| 100                         | 3,000A  |
| 1,000                       | 1,600A  |
| 10,000                      | 650A    |
| 100,000                     | 400A    |
| 1,000,000                   | 240A    |

## ■ Installation Diagram

### Series Connection

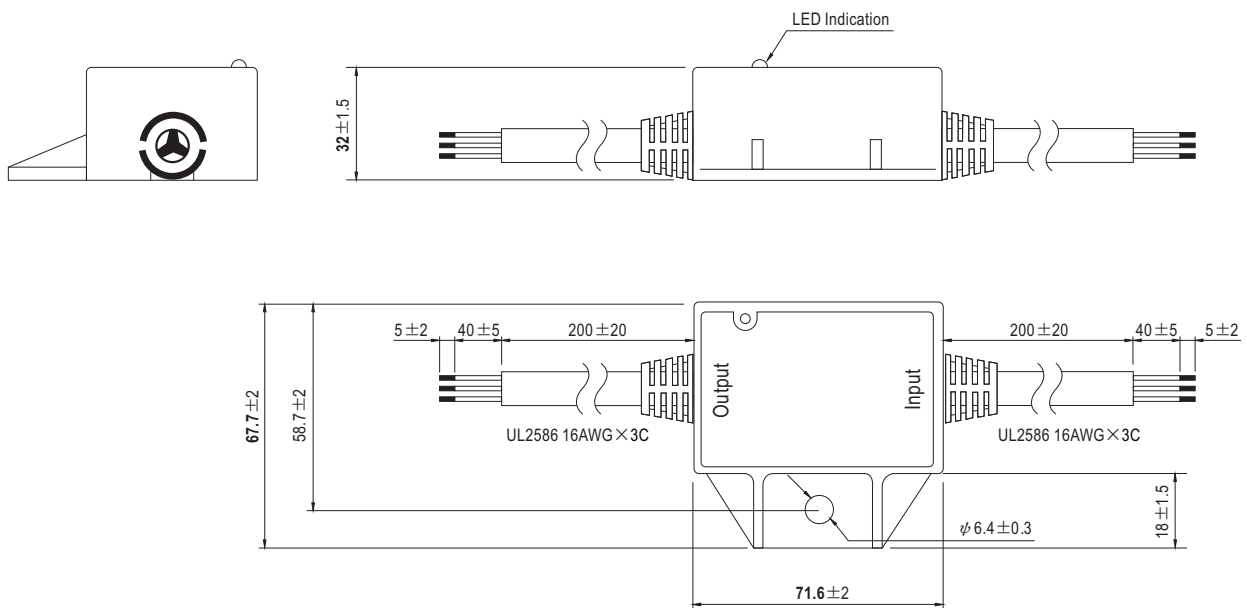


#### Notes:

1. Green LED light ON: SPD is good
2. Green LED light OFF: SPD needs replacement

## ■ Mechanical Specification

Unit:mm





## ■ INSTALLATION

1. This document provides detailed information on how to install and operate the SPD-20HP of Surge Protective Devices (SPDS). Please refer to "Installation Diagram".
2. The SPD-20HP of Surge Protective Devices are installed/connected in series with the line of TN System.
3. Before starting any installation procedures, verify service voltage (AC or DC) with a volt meter to ensure that the correct model has been selected for the supply voltage.
4. DO NOT INSTALL THE SPD IF MEASURED VOLTAGE EXCEEDS UNIT RATINGS.
5. REMOVE POWER FROM ELECTRICAL SYSTEM PRIOR TO INSTALLATION.
6. ENSURE THAT ALL CONNECTIONS ARE CORRECT BEFORE ENERGIZING.
7. Apply power (energize), LED indicator should illuminate. If LED is out, the SPD requires service.