

### Service Entrance AC Panel

All facilities that employ mission-critical electronic equipment should have a properly sized surge protective device (SPD) installed at the main electrical service entrance. Surge protection connected to the incoming power line provides the first line of defense against transient surges which are typically caused by nearby utility grid switching, lightning or other power disturbances.

Voltage	Lugs Only (Recommend Connect to Breaker) Part Number
120/208 V Wye	SPD300K10YRC
277/480 V Wye	SPD300K27YRC
480 V Delta	SPD300K48DRC
240 V Delta	SPD300K24DRC



SPD300K Series

### Distribution Panel AC Power

A quality surge protective device connected to key distribution panels throughout the facility provides a second level of protection. It also provides a first line of defense against the repetitive internal surge events cause by motor load switching, capacitor bank switching and other internally generated surges. These smaller surge events can slowly degrade electronics, which can disrupt productivity.

Voltage	Lugs Only (Recommend Connect to Breaker) Part Number
120/208 V Wye	SPD200K10YRC
277/480 V Wye	SPD200K27YRC
480 V Delta	SPD200K48DRC
240 V Delta	SPD200K24DRC



SPD200K Series

### Branch Panel AC Power

Dangerous power disturbances can exist anywhere in a facility. In order to be fully protected, SolaHD strongly recommends surge protection be installed at specific sensitive loads or anything drawing an AC current.

IEEE Emerald Book recommends surge protection at critical branch panel-boards, and at specific sensitive loads, including uninterruptible power supplies (UPS), or other mission-critical equipment found within a facility.

Voltage	STV100K Part Number	SPD50K Part Number	STV25K Part Number
120/208 V Wye	STV100K10Y	SPD50K10Y	STV25K10S (120 V 1Ph)
277/480 V Wye	STV100K27Y	SPD50K27Y	—
480 V Delta	STV100K48D	SPD50K48D	—
240 V Delta	STV100K24D	SPD50K24D	STV25K24S (240 V 1Ph)



STV100K Series  
(Panel Mount)



SPD50K Series  
(Tri-Mount)



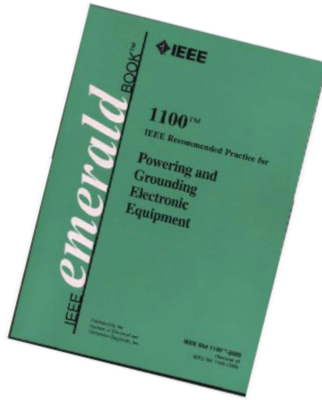
STV25K Series  
(Din Rail)

**IEEE Standard**

IEEE Standard 1100 Section 4.4.5.2 “A single lightning or switching surge often causes immediate, but not readily apparent physical damage to semiconductor devices.

IEEE Standard 1100 Section 8.6.2 “... Recommended SPD installation practice is for all lead lengths to be short and shaped to minimize open-loop geometry between the various conductors...by twisting all the phase, neutral, and equipment grounding conductors together; and by avoiding any sharp bends and coils in the conductors.”

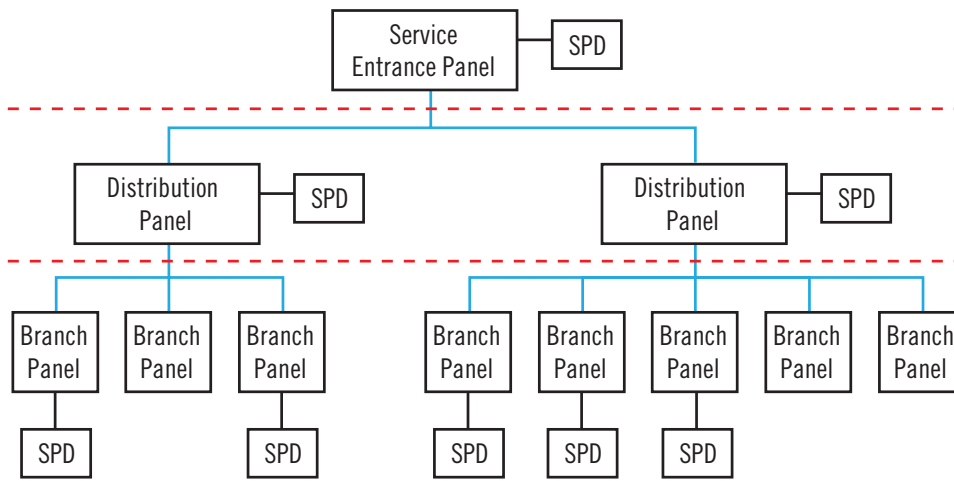
IEEE Standard 1100 Section 8.6.3 “Facilities housing electronic load equipment of any type should have service entrances equipped with ...Category “C” surge protective devices, as specified in IEEE Std C62.41-1991.”



IEEE Standard 1100 Section 8.6.4 “... it is recommended that additional surge protective devices of listed Category “B” or Category “A,” as specified in IEEE Std C62.41-1991, be applied to downstream electrical switchboards and panelboards, and panelboards on the secondary side of separately derived systems if they support communications, ITE, signaling, television, or other form of electronic load equipment.”

IEEE Standard 1100 Section 8.6.5 “...It is recommended practice that both the input circuit to the UPS and the associated bypass circuits (including the manual bypass circuit) be equipped with effective Category “B” SPD”

**IEEE Recommended Locations**



Service Entrance Locations  
(Min. Rating):  
240 kA

Distribution Locations  
(Typical Rating Range):  
120-160 kA

Branch Locations  
(Typical Rating Range):  
50-120 kA

Once it has been determined where the SPD units are to be installed, help in determining the surge rating (level of protection) can be found by referencing the panels Ampere rating (see chart below).

Panel Size	Surge Rating “Per Phase” (L-N + LG) Recommended Protection	
	(Better)	(Best)
0 - 225 Amp	50 kA	100 kA
400 - 600 Amp	100 kA	200 kA
800 - 1200 Amp	100 kA	200 kA
1600 - 2500 Amp	200 kA	300 kA
3000 Amp and Above	300 kA	300 kA

SolaHD Unit	Surge Rating (Per Phase)
SPD300K	300 kA
SPD200K	200 kA
STV100K	100 kA
SPD50K	50 kA
STV25K	25 kA