

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 | Internal Disconnect Switch with Surge Counter Part Number |
|--------------|--|---|
| 120/208V WYE | STV400K-10Y | STV400K-10Y-RC |
| 277/480V WYE | STV400K-27Y | STV400K-27Y-RC |
| 480V Delta | STV400K-48D | STV400K-48D-RC |
| 240V Delta | STV400K-24D | STV400K-24D-RC |



STV400K 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 | Internal Disconnect Switch with Surge Counter Part Number |
|--------------|--|---|
| 120/208V WYE | STV200K-10Y | STV200K-10Y-RC |
| 277/480V WYE | STV200K-27Y | STV200K-27Y-RC |
| 480V Delta | STV200K-48D | STV200K-48D-RC |
| 240V Delta | STV200K-24D | STV200K-24D-RC |



STV200K 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 | Lugs Only (Recommend Connect to Breaker) Part Number | In Panel Use (Din Rail Mount) Part Number |
|--------------|--|---|
| 120/208V WYE | STV100K-10Y | STV25K-10S (120V 1PH) |
| 277/480V WYE | STV100K-27Y | — |
| 480V Delta | STV100K-48D | — |
| 240V Delta | STV100K-24D | STV25K-24S (240V 1PH) |



STV100K Series

STV25K Series

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.”

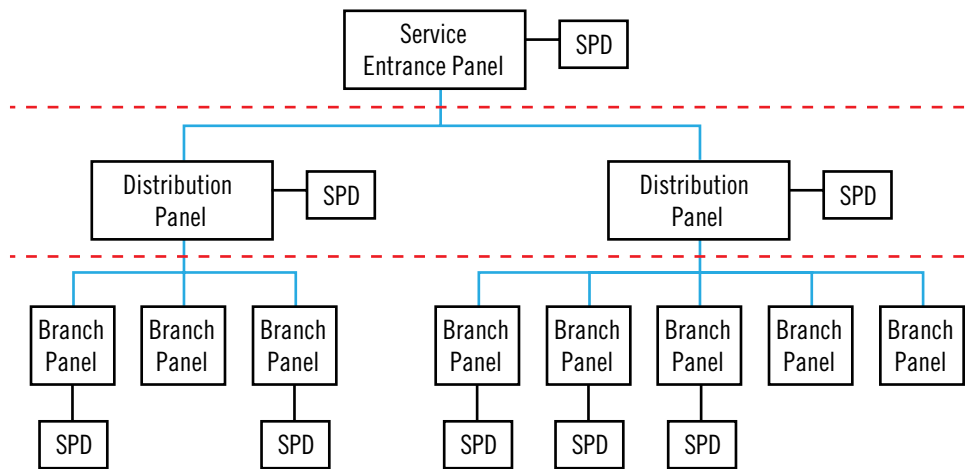
IEEE Standard 1100 Section 8.6.3 “Facilities housing electronic load equipment of any type should have service entrances equipped with ...Category “C” surge protective devices, as specified in IEEE Std C62.41-1991.”



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



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 | 100KA | 100KA |
| 400 - 600 Amp | 100KA | 200KA |
| 800 - 1200 Amp | 100KA | 200KA |
| 1600 - 2500 Amp | 200KA | 400KA |
| 3000 Amp and Above | 400KA | 400KA |

| SolaHD Unit | Surge Rating (Per Phase) |
|-------------|-----------------------------|
| STV 400K | 400KA |
| STV 200K | 200KA |
| STV 100K | 100KA |
| STV 25K | 25KA |