ASCO Power Technologies®

FULL FACILITY SURGE PROTECTION

Mission Critical

Application Guide

Service Entrance - AC Power

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 on an 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.

For nearly 20 years, the **ASCO Model 570 Hybrid** surge protective device has been field-tested in critical locations using industry leading surge and noise attenuation technology. The multi-staged design integrates the transient response performance of Silicon Avalanche Diode technology and the high-energy capability of our own Metal Oxide Varistor/Fuse Link Array with a custom impedance matching network. This unique design ensures a truly coordinated system, enabling the 570 Hybrid to deliver the industry's best performance in the harshest environments.

ASCO Model 570

Include the Active Surge Monitor package to enable web-based, real-time power quality measurements. The fully integrated monitoring package enables you to log and record the severity, type, and timing of power quality anomalies within your electrical system. This system enables you to analyze trends and better manage your Mission Critical electrical system. For further information, refer to ASCO document SS-70116 – Active Surge Monitor or contact ASCO Power Technologies directly.

Voltage	Compression Lug Connection (Recommended installation using a Circuit Breaker)		Internal Rotary Disconnect Switch Connection (Recommended for all installations)	
	Part Number	w/ Active Surge Monitor	Part Number	w/ Active Surge Monitor
208Y/120V WYE	570120YP40ACDG10	570120YP40ACTG10	570120YP40ATDG10	570120YP40ATTG10
408Y/277V WYE	570277YP40ACDG10	570277YP40ACTG10	570277YP40ATDG10	570277YP40ATTG10
480V Delta	570480CP40ACDG10	570480CP40ACTG10	570480CP40ATDG10	570480CP40ATTG10
240V Delta	570240CP40ACDG10	570240CP40ACTG10	570240CP40ATDG10	570240CP40ATTG10

Distribution Panels - AC Power

A quality surge protective device connected to key distribution panels throughout the facility provides a second level of protection. In addition to further reducing an external surge event, it also provides a first level of defense against the repetitive internal surge events cause by motor load switching, capacitor bank switching and other internally generated surges. These smaller transients can slowly degrade electronics and disrupt productivity. The **ASCO Model 560** surge protective device has been field tested in critical locations and it's backed by a worry-free 10-year parts/5-year labor warranty.

ASCO Model 560

Voltage	Compression Lug Connection (Recommended installation using a Circuit Breaker)		Internal Rotary Disconnect Switch Connection (Recommended for all installations)	
	Part Number	w/ Active Surge Monitor	Part Number	w/ Active Surge Monitor
208Y/120V WYE	560120YP16ACCG10	560120YP16ACTG10	560120YP16ATCG10	560120YP16ATTG10
408Y/277V WYE	560277YP16ACCG10	560277YP16ACTG10	560277YP16ATCG10	560277YP16ATTG10
480V Delta	560480CP16ACCG10	560480CP16ACTG10	560480CP16ATCG10	560480CP16ATTG10
240V Delta	560240CP16ACCG10	560240CP16ACTG10	560240CP16ATCG10	560240CP16ATTG10

Branch Panels - AC Power

Dangerous power disturbances can exist anywhere in a facility. In fact, a large portion of transients are generated by equipment from within a facility. Installing surge protection at the electrical service entrance and distribution panels is a prudent choice and is highly recommended by ASCO. However, in most cases, these choices don't go far enough in securing overall power quality protection for individual equipment. In order to be fully protected, ASCO recommends installing surge protection at specific sensitive loads and any equipment drawing an AC current.

Not only does ASCO encourage customers to install surge protection at branch panelboards, but we strongly recommend surge protection be installed at specific sensitive loads, including uninterruptible power supplies, (UPS), or other mission-critical equipment found within a facility.

The **ASCO Model 510** surge protective device is a multi-phase, multi-mode, panel-mounted device that offers continuous protection from damaging transients and electrical line noise. This unit is perfect for facility-wide applications and its compact size allows it to be easily retrofitted on existing panelboards. It's also manufactured using arrays of surge components for redundancy and reliability, backed by a worry-free, 10-year replacement warranty.

ASCO Model 510

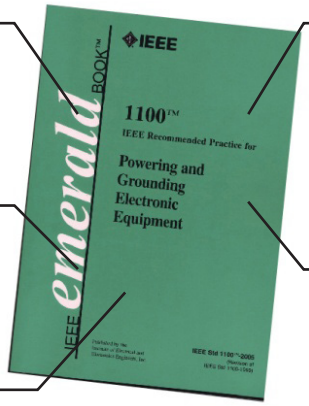
Voltage	UPS Panels (Recommended installation using a Circuit Breaker)	Branch Panels (Recommended installation using a Circuit Breaker)
	Part Number	Part Number
208Y/120V WYE	510120YP16ACAJ10	510120YP13ACAJ20
408Y/277V WYE	510277YP16ACAJ10	510277YP13ACAJ20
480V Delta	510480CP16ACAJ10	510480CP13ACAJ20
240V Delta	510240CP16ACAJ10	510240CP13ACAJ20

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. This damage then finally appears at some later time…"

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"

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