

PQI SURGE PROTECTION DEVICE COMPARISON CHART

Type 1 & 2, UL 1449 4th Edition Listed Surge Protection Devices

<i>Product Features & Benefits</i>	<i>Minimal Small Resi Non-Modular</i>	<i>Good Small Panel Non-Modular</i>	<i>Good Distribution 100-400A Non-Modular</i>	<i>Better Distribution 600A & Up Non-Modular</i>	<i>Best 1 SE Less Than 400A Modular 1x Redundancy</i>	<i>Best 2 SE 400-1200A Modular 2x Redundancy</i>	<i>Best 3 SE 1600 - 2500 Modular 3x Redundancy</i>	<i>Best 4 SE 3000A & Up Modular 4x Redundancy</i>	<i>AHCA Exterior Circuit SPDs</i>
PQ Model Numbers	SPD-LA	SPD-C50	SPD-C100	SPD-C200	SPD-M100	SPD-M200	SPD-S300	SPD-S400	SPD-D Series
Surge Current Handling Capability/Rating	40kA/Phase	50kA/Phase	100kA/Phase	200kA/Phase	100kA/Phase	200kA/Phase	300kA/Phase	400kA/Phase	50kA/Mode
Protection Modes L-N, L-L, L-G & N-G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	L-N
UL Nominal Current Performance Rating (<i>In</i>)	20KA In	10kA In	20kA In	20kA In	20kA In	20kA In	20kA In	20kA In	20kA In
Installation Location UL Rating <i>Line Side (type 1) or Load Side (type 2) rated</i>	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2
VPR <i>Voltage Protection Rating (clamping voltage)</i> <i>L-N or L-G (240V or 208V) = 600-800V/ 480V= 1000-1200V</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Protection Component Technology	MOV	MOV	MOV	MOV	MOV + Opt. CAPS	MOV + Opt. CAPS	MOV + Opt. CAPS	MOV + Opt. CAPS	MOV
Ultra 2x Technology <i>Up to 2x Nominal Line Voltage Without Failure</i>		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SCCR/AIC Rating	200kAIC	200kAIC	200kAIC	200kAIC	200kAIC	200kAIC	200kAIC	200kAIC	65kAIC
Modular Design- <i>Redundant Protection per mode & phase, simple field serviceability</i>					Yes	Yes	Yes	Yes	Yes
Failure Indication	per phase	per phase	per phase	per phase	per phase & mode	per phase & mode	per phase & mode	per phase & mode	per circuit
Dry Contacts <i>(for remote monitoring)</i>		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audible Alarm					Yes	Yes	Yes	Yes	
Surge Event Counter					Optional	Optional	Yes	Yes	
Available Voltages: <i>120/240D* = High Leg Delta</i> SP = Single Phase 1P = Single Pole	120/240-SP 120/208-3Y 120/208-3Y 120-1P*	120/240-SP 120/208-3Y 277/480-3Y 120/240D*	120/240-SP 120/208-3Y 277/480-3Y 120/240D*	120/240-SP 120/208-3Y 277/480-3Y 120/240D*	120/240-SP 120/208-3Y 277/480-3Y 120/240D* 240D (Delta) 480D (Delta)	120/240-SP 120/208-3Y 277/480-3Y 120/240D* 240D (Delta) 480D (Delta)	120/240-SP 120/208-3Y 277/480-3Y	120/240-SP 120/208-3Y 277/480-3Y	120/240-SP 120/208-3Y 277/480-3Y 120-1P 277-1P 240D (Delta) 480D (Delta) 208-2P 480-2P
Replacement Warranty	5 Years	10 Years	10 Years	10 Years	20 Years	20 Years	20 Years	20 Years	10 Years
Availability	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>stock to 10 days</i>	<i>4-6 weeks</i>
Flush Mount Kit Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Side Mount Kit Available		Yes	Yes	Yes	Yes	Yes			
Top Mount Kit Available							Yes	Yes	
Switchboard Mounting Kit Available						Yes	Yes	Yes	

"Best" is common for service entrance applications for ease of service & additional monitoring
Modular SPDs incorporate an integral disconnect for servicing
Contact Number 888-539-7712

All PQI SPDs incorporate OCP and can be connected to a breaker or directly to the line or load side of the main input
Best 1,2,3,4 indicates redundancy levels, higher surge handling capabilities and longer life of SPD

NEC Code Requirements for Surge Protection



620.51(E) “Where any of the disconnecting means in 620.51 has been designated as supplying an emergency system load, surge protection shall be provided”. This article was added to address emergency system loads such as elevators, escalators, moving sidewalks, chairlifts and associated equipment.



645.18 “Surge protection shall be provided for Critical Operations Data Systems.” Critical Operation Data Systems are defined by the NECT as “Information technology equipment systems that require continuous operation for reasons of public safety, emergency management, national security or business continuity.”



670.6 “Industrial machinery with safety interlock circuits shall have surge protection installed”. The concern is failure of safety interlocks on machinery, causing safety risk to operators who may not be aware of disabled safety mechanisms.



694.7(D) “A surge protection device shall be installed between a wind electric system and any loads served by the premises electrical system.” The surge device can be on the circuit serving the wind electric system or on the load side of the service disconnect.



695.15 “A listed surge protection device shall be installed in or on the fire pump controller.” A new NEC provision requires a listed surge protection device (SPD) to be installed in or on the fire pump controller. An SPD is necessary to provide protection for the fire pump controller. A study commissioned by the Fire Protection Research Foundation found that 12% of those surveyed had damage to fire pumps due to surges.



700.8 “A listed SPD shall be installed in or on all emergency systems switchboards and panel boards.” The NEC defines emergency power systems as systems legally required to automatically supply power to designated loads upon loss of normal power. This requirement will help ensure emergency electrical distribution systems continue to deliver reliable power to vital life-safety loads in the event of damaging surges.



708.20 “Surge protection devices shall be provided at all facility voltage distribution levels” for Critical Operation Power Systems (COPS). COPS include but are not limited to power systems, HVAC, fire alarms, security, communications and signaling for designated critical operations areas. Surge protection ensures that these systems will operate in an emergency.