

NATIONAL ELECTRICAL CODE

First introduced in 1897, the National Electrical Code (NEC) was established for the practical safeguarding of persons and property from hazards arising from the use of electricity. The use of Surge Protective Devices (SPDs) was first mentioned in the 2002 NEC, but it was more of a “best practice guide” than a mandatory requirement for general use. Subsequent revisions, however, have solidified the use of SPDs as a required standard, even in cascaded schemes, for the protection of sensitive electronic components embedded in systems throughout industrial, commercial and residential structures.

MERSEN SOLUTIONS

For over 140 years, Mersen has been a leader in the electrical power industry. Since entering the surge protection market in 1996, we’ve revolutionized the industry, pioneering the Thermally Protected Metal Oxide Varistor (TPMOV®). The widespread adoption of this technology has made it the gold standard in performance and safety for Surge Protective Devices globally. Mersen’s Surge-Trap® family of products offer a full range of SPDs, featuring TPMOV technology, which are designed to help you achieve the requirements of the latest NEC Code.



Mersen SPD Ratings and Features:

- **Volts:** 120-600VAC
- **Nominal Rating (I_n):** 20kA
- **Surge Capacity (per phase):** 25 - 450kA
- **Short-Circuit Current Rating (SCCR):** 200kA
- **Modes of Protection:** Up to 10
- LED Status Indicators
- Audible Alarm
- Dry Contacts
- Phase Loss Indication
- Surge Counter
- **EMI/RFI Filter:** Up to -50dB from 10kHz to 100MHz
- **Disconnect:** Internal or Door Mounted
- **Warranty:** Up to 15 years

NEC REQUIREMENTS

YEAR RELEASED	ARTICLE	SYSTEM OR EQUIPMENT COVERED
2008	708.2	Critical Operation Power Systems (COPS): First mandatory SPD requirement for systems essential to national security or public safety such as fire alarms, security, HVAC, signaling and communications.
2011	694.7(D)	Wind Electric Systems: Mandatory surge protection between the wind system and premises loads.
2014	700.8	Emergency Systems: Broad mandate for emergency switchboards and panelboards feeding life-safety loads.
2017	620.51(E)	Elevators & Lifts: Required for disconnects supplying emergency loads such as elevators, escalators and moving walkways.
	645.18	Critical Operations Data Systems: Mandatory protection for critical IT infrastructure for reasons of public safety, emergency management, national security, or business continuity.
	670.6	Industrial Machinery: Required for machines with safety interlock circuits. (*this is also a requirement of NFPA79 standards for industrial machinery)
	695.15	Fire Pump Controllers: Listed SPDs must be installed directly in or on the controller.
2020	230.67	Residential Services: Mandatory for all services supplying dwelling units, including replacements.
2023	215.18/225.42	Feeders: Protection for feeders supplying the same critical occupancies as 230.67.
	230.67 (Update)	Expanded Residential: Expanded to include all services supplying dwelling units, for locations including but not limited to dormitories, hotels, and nursing home areas. The SPD must be a type 1 or 2, with a Nominal Discharge Current (I _n) of 10kA or more.
	409.70	Industrial Control Panels: Required for panels containing personnel safety circuits.
	551.72	RV Sites: Mandatory requirement for Surge Protective Devices at all RV site supply equipment, commonly known as the RV pedestal.
2026	230.67 (Update)	Responder Sleeping Quarters: Expanded to include sleeping quarters in fire, police, and ambulance stations.
	551.72 (Update)	RV Sites: Mandatory requirement for Surge Protective Devices at a Nominal Discharge Current Rating (I _n) and expands coverage for emergency responder sleeping quarters within or associated with park facilities.
	620.51(E) (Update)	Elevators, Escalators, Moving Walks, and Similar Equipment: Surge Protective Device (SPD) must be installed to protect the control circuits of elevators, escalators, moving walks, and similar equipment.
	701.8	Legally Required Standby Systems: Mandatory protection for infrastructure legally required but not classified as “emergency.”