



# APPLICATION GUIDE

The National Electrical Code (NEC®) and the National Fire Protection Association 70 are two North American references on electrical standards. According to these two codes, a certain number of equipment must be protected by surge protectors.



## CODS Protection — Critical Operations Data Systems

According to NEC® 645.18, electronic systems managing critical equipment must be defended by Type 1 or 2 surge protectors. It is therefore recommended to specifically protect electrical systems connected to emergency servers, information processing systems that should not be shut down or safety systems such as fire alarms.



## Fire pump controller

According to NEC® 695.15, a surge protector must be installed in or on the fire pump controllers to protect them against the risks and damage associated with lightning and surges.

According to a National Fire Protection Association (NFPA) study, 12% of those surveyed reported property damage related to power surges.



## Loading systems

According to NEC® 620, whether in a residential or industrial installation, load systems such as elevators, escalators, conveyors, chairlifts or other associated equipment, because they are connected to your entire electrical circuit, must be protected against lightning and power surges.



## Wind power systems

According to NEC® 694.7, surge protection must be installed between wind power systems and electrical loads.



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## MCC and emergency electrical panels

According to NEC® 700.8, According to the NEC 700.8, switchboards and emergency switchboards must be protected. Emergency equipment is defined as any system required to automatically supplement your generator in case of abnormal loss of power. It is essential to protect this equipment to ensure that it is not destroyed at the same time as the electrical circuit it is intended to replace.



## Protect the different voltage levels

According to NEC® 708.20, surge protection must protect your emergency equipment at all voltage levels to ensure their functionality even in the case of unexpected events. It is therefore recommended to specifically protect electrical systems, HVACs, communications and signals in critical operational locations.

The electrical code recommends distributing the protection at different voltage levels, as these devices are connected to electronic boards and PLCs. These control systems are sensitive and can be disabled by overvoltages. It is important for the safety of users to properly protect these emergency electrical circuits so that they remain active even in the case of a major weather event to ensure that emergency services remain operative. Lightning is a common environmental hazard that can destroy your servers and damage your electrical system.

In addition, overvoltages related to internal plant activities housing your equipment and your servers can strongly damage your installations. They significantly shorten their lifespan, resulting in breakdowns, slowdowns and higher maintenance costs or even a partial loss of your data.



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