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(57) Abstract :
With the proliferation of electric vehicles and new fast charging technology, the need for reliable and secure charging infrastructure is also increasing. Both actual charging devices and connected vehicles must be protected against over voltages, as both contain critical electronic components. It is necessary to protect the equipment against the effects of lightning strikes and against power fluctuations on the network side. A direct lightning strike is devastating and difficult to protect against, but the real danger to all types of electronic equipment comes from the resulting electrical surge. In addition, all grid-side power switching operations connected to the grid are potential sources of electrical hazard in electric cars and charging stations. Possible sources of damage to these devices include short circuits and earth faults. To be prepared against these electrical hazards, it is important to take appropriate safety measures. Protecting expensive investments is imperative and the associated electrical standards prescribe suitable ways and means of protection. There's a lot to consider because there's no one-size-fits-all solution to address the various sources of risk. This paper helps to identify the hazard situations on AC and DC side and the corresponding safety solutions

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