



# SOLUTIONS FOR EV CHARGING STATIONS

Ferraz Shawmut | Eldre | Idealec | FTCAP



## EV SUPPLY EQUIPMENT

It's estimated that there are around 2 to 3 million pure battery electric and plug-in hybrid electric vehicles on the world's roads today. By 2040, it is forecasted that there may be 300-400 million EVs on the road out of approximately 2 billion vehicles. Therefore, several millions of EV charging stations will be deployed to load these batteries.

With power ranging from AC 3.7kW to DC 350kW and up, and voltage now reaching 800VDC for ultra-fast chargers, EV chargers require very specific power management and electrical protection features. Mersen has developed a comprehensive product offering covering overcurrent and surge protection, low-voltage switches, liquid or air cooling solutions, bus bar connections, and DC-link capacitors.



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## EV CHARGING STATIONS

### LOW VOLTAGE SWITCHES



Low voltage switches are used in EV Charging station power units to disconnect main power to the station. Disconnecting main power is necessary in order to safely conduct maintenance or if need be, to enter the internal components of the charging station.

### SURGE PROTECTION COMPONENTS



EV chargers contain expensive and sensitive electronics. They are installed outdoors, exposed to lightning-induced overvoltages ("C-High locations"). Mersen Surge-Trap Surge Protective Devices protect... protect your electronics from harmful and preventable surge damage.

### HIGH SPEED DC FUSES



High speed fuses are used to protect semiconductor devices against overcurrent conditions. They are specifically designed to reduce the  $I^2t$ , peak let-through current, and arc voltages during a fault condition.

### COOLING



Mersen cold plates and heat sinks with embedded heat pipe provide superior cooling performance and are custom designed to provide you the most suitable semiconductor cooling solution.

### BUS BAR



Bus bar is used in the Power Station assembly to distribute power and assist with cable management. Utilizing bus bar reduces the volume of cable and in turn the space required to manage the cable.

### CAPACITORS



DC-link capacitors are key components to filter the ripple current during the AC-DC or DC-DC power conversion operations.

## EV CHARGING STATION POWER

### POWER DISTRIBUTION BLOCKS



Provides a safe and easy method of splicing cables, splitting primary power into secondary circuits and fulfilling requirements for fixed junction tap-off points.

### CLASS J AND CC FUSES & FUSE HOLDERS



Class J and CC fuses and fuse holders are needed for the protection of auxiliary components and any electrical devices which are sensitive to overcurrents.