GETON CONTAINERS

DC discharge inverter for new energy vehicles

Overview

Do EV traction inverters need a DC link active discharge?

Every EV traction inverter requires a DC link active discharge as a safety-critical function. The discharge circuit is required to discharge the energy in the DC link capacitor under the following conditions and requirements: Power transistor on, off control using the TPSI3050-Q1.

Why do EV inverters need to be discharged?

Abstract: when an Electrical Vehicle (EV) encounters an accident or the vehicle is taken to a service station, the DC-link capacitor in the inverter must be discharged to ensure safety of both the passengers and the operator.

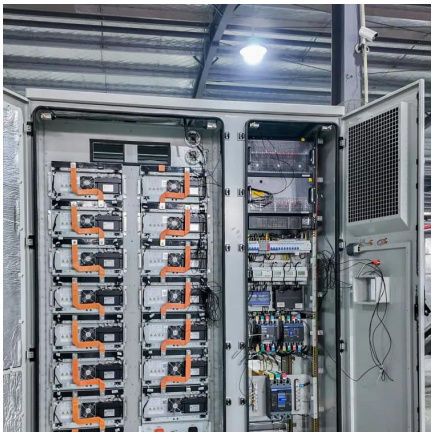
Do electric vehicles need traction inverters?

Electric vehicles rely on traction inverters to convert the high-voltage DC energy stored in the vehicle’s batteries to drive the AC traction motors. The traction inverter plays a crucial role in driving the vehicle and needs to be extremely robust and reliable, given the high power switching and the likely high dv/dt transients involved.

How do EV traction inverters work?

To control the voltage so that the voltage does not exceed 50 V (touch safe), the auxiliary power supply has to turn on and power up safety-relevant circuits that can discharge the DC link caps (active discharge) or actively short circuit the motor. Every EV traction inverter requires a DC link active discharge as a safety-critical function.

DC discharge inverter for new energy vehicles



A technical review of modern traction inverter systems used ...

Abstract This article presents a comprehensive review of modern traction inverter systems, their possible control strategies, and various modulation techniques deployed in ...

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A DC-Link Hybrid Active Discharge Scheme for Traction Inverters

when an Electrical Vehicle (EV) encounters an accident or the vehicle is taken to a service station, the DC-link capacitor in the inverter must be discharged to ensure safety of ...

DC-DC Converters and Inverter Modules for Electric Vehicles

Increasing vehicle electrification has opened a niche for power supplies, such as DC-DC converters and inverter modules, which are not in most ICE vehicles.

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V2L, V2V, V2H, V2G? A Guide to Four External Power Supply ...

V2H refers to the provision of electricity to households from new energy vehicles, also termed vehicle-to-home energy transfer. Typically deployed in detached houses with ...

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How to Reduce the Power Resistor for DC-Link ...

The DC-Link capacitor is a part of every traction inverter and is positioned in parallel with the high-voltage battery and the power stage (see Figure 1). The DC-Link ...

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Enabling Smarter DC Link Discharge in EV Traction Inverters

Enabling Smarter DC Link Discharge in EV Traction Inverters By using an integrated gate driver for DC link discharging, you can shrink BOM costs, save PCB space, ...

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Design Priorities in EV Traction Inverter With Optimum ...

A traction inverter also converts recuperation energy from the motor and recharges the battery while the vehicle is coasting or braking. There are several key design priorities and ...

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EV Traction Inverter Design Challenges

Electric vehicles rely on traction inverters to convert the high-voltage DC energy stored in the vehicle's batteries to drive the AC traction motors. The traction inverter plays a crucial role in driving the vehicle and needs to be ...

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Integration of fast charging EV infrastructure with high gain ...

A stand alone building integrated PV tied bidirectional capability direct DC electric vehicle charging system through Z-source inverter impedance network capacitors.

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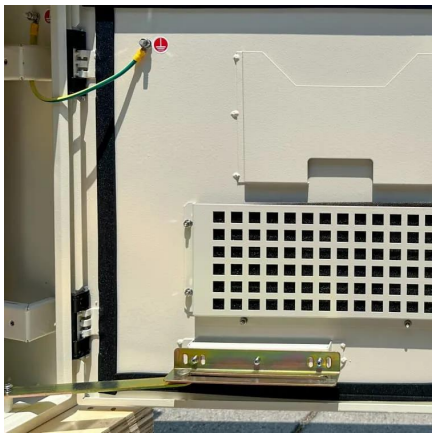

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