

What is a battery contactor?

In a battery the contactors are a switch that can be operated by the control system. They are essentially a relay. These contactors are designed to be able to break (switch off) the circuit under full load (maximum current and at maximum system voltage). There are two main types of contactors: Normally Open (NO) and Normally Closed (NC).

How does a high voltage contactor work?

As a key safety device in new energy vehicles, a high-voltage contactor needs basic functions that are resistant to high voltage, load, shock, strong arc extinguishing, and breaking capacity. An appropriate current is applied to the coils such as using an IC, such as DRV3946, to ensure proper force to drive the contacts for robust operation.

How does a contactor work?

In accordance with the requirements of ISO 6469 and IEC 60664, the contactor ensures galvanic separation between the vehicle electrical system and the battery. During normal operation, the contactors are switched on after a 95% pre-charge of the filter capacity and they have to switch off up to 30 A at 450 V per drive cycle.

Why do contactors have two different electrical circuits inside?

Therefore, contactors have two different electrical circuits inside: one is for actuation and the other one is to carry currents during the switch-on state. There are two main types of contactors: Normally Open (NO) and Normally Closed (NC). A NO contactor does not allow current to flow when the actuation circuit is not powered.

What is the difference between EV contactor and NC contactor?

A NO contactor does not allow current to flow when the actuation circuit is not powered. However, an NC contactor connects the external circuit when the contactor actuation coil is not energized. Therefore, we use EV contactors as NO to switch off the circuit in case of loss of actuation circuit supply.

Should a fuse and main contactor separate the battery system?

Fuse and main contactor must securely separate the battery system from the motor in case of over currents, e.g. in the event of a crash [IV]. The main contactors must keep full functionality, i.e. carry or separate the overcurrent, as long as the fuse has not tripped.

These all describe the same device that we can use to quickly disconnect the aircraft battery from the rest of the electrical system.. This device is often confused with the starter contactor or starter solenoid. They are NOT the ...

The EVC 250 contactor features larger contact gaps and optimized switching dynamics. It features high-performance arc suppressing magnets to effectively control the switching arc. ...

Oslo energy storage dc contactor function. With excellent isolation parameters they ensure a safe disconnection of the battery unit from the inverter in these storage systems. They contribute to ...

BMS management system as a new energy vehicle power battery pack monitoring management center, must be the battery temperature, voltage and charge and discharge current and other related parameters for real-time ...

Its Seven Functions Include Battery Status Monitoring, battery Protection, Battery Balance Control, Charge and Discharge Management, Temperature Management, ...

Considering the supply chain composed of a power battery supplier and a new energy vehicle manufacturer, under the carbon cap-and-trade policy, this paper studies the ...

Because its energy is stored in batteries, the key characteristics of xEVs are related to efficiency, safety, and reliability. ... I've seen this solution promoted by a few ...

In order to regulate the direct current produced by solar panels, DC contactors are employed in solar energy systems. From solar inverters to solar panels and grid-tied ...

With the rapid development of new energy vehicles and charging facilities nowadays, the market capacity of electric vehicle DC contactors, one of their key electrical components, has also expanded continually. DC contactors for ...

Acting as switches, these contactors regulate the flow of electricity from the power source to the vehicle's battery. Their primary function is to establish a secure and dependable link between the charging station and ...

Function: Electric Vehicles: BMS is crucial for large automotive battery packs, monitoring thousands of cells. Hazard prevention, thermal and charge management optimize ...

Web: <https://www.vielec-electricite.fr>