

# Battery cabinet pressure protection





## Overview

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The liquid-cooled battery energy storage system (LCBESS) has gained significant attention due to its superior thermal management capacity. However, liquid-cooled battery pack (LCBP) usually has a.

Are lcbess batteries safe?

However, liquid-cooled battery pack (LCBP) usually has a high sealing level above IP65, which can trap flammable and explosive gases from battery thermal runaway and cause explosions. This poses serious safety risks and challenges for LCBESS.

What happens when LCBP batteries vent?

When the internal batteries vent due to TR or when an explosion occurs inside the LCBP, the internal pressure rapidly increases, compressing the spring and pushing the piston to open the exhaust channel for pressure relief. The membrane PRV has a waterproof and breathable membrane on the exhaust channel.

Can LCBP overcharge a battery?

In this study, we tested overcharged battery inside a commercial LCBP and found that the conventionally mechanical pressure relief valve (PRV) on the LCBP had a delayed response and low-pressure relief efficiency. A realistic 20-foot model of an energy storage cabin was constructed using the Flacs finite element simulation software.

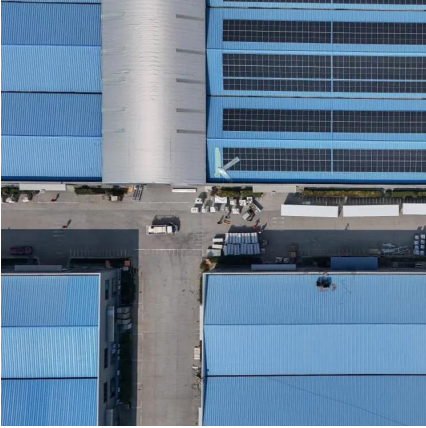
What was the surface temperature of LCBP battery before 9054 s?

Until 9054 s, the surface temperature of the battery had dropped to 66.8 °C. There was no explosion inside the LCBP, and the battery casing showed no signs of heat burns. Fig. 9. Surface temperature of battery, outlet temperature of battery safety valve, and concentration data of H<sub>2</sub> and CO inside the LCBP from 7200 to 7600 s.



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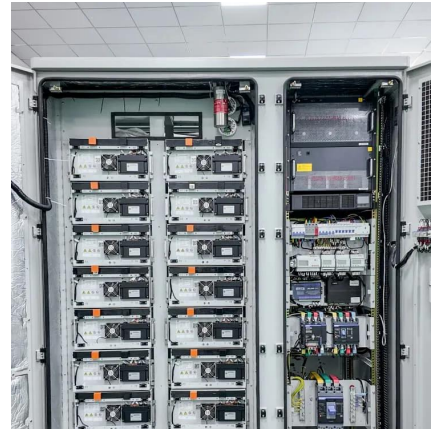


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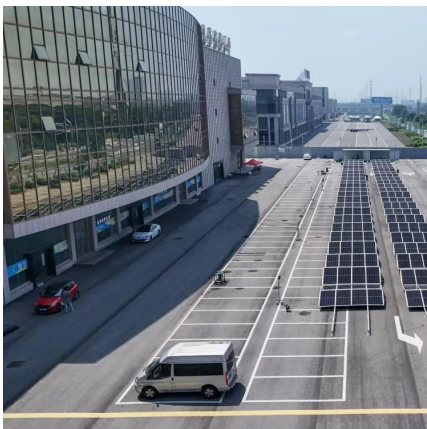
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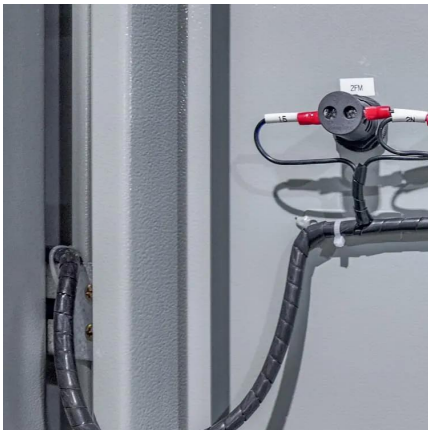
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