

# Low-voltage protocol for smart photovoltaic energy storage containers used in shopping malls

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What is the optimal energy storage power of photovoltaic energy storage?

The optimal energy storage power of photovoltaic energy storage power station is obtained based on the real-time data such as the charge state of the storage system. This paper constructs an optimal voltage control model through ADP algorithm and obtains the optimal coordinated control strategy.

Can photovoltaic energy storage power stations be controlled efficiently?

At the same time, the coordinated control problem of multiple voltage and reactive power resources was fully considered. By establishing an optimal voltage control model, precise control of the power station voltage was achieved, significantly improving the coordinated control effect of photovoltaic energy storage power stations.

What is the mathematical model of a photovoltaic energy storage power station?

The mathematical model expression of the photovoltaic system in the photovoltaic energy storage power station is as follows: In formula (1),  $N_P$  and  $N_S$  represent the number of series capacitors and parallel capacitors in a photovoltaic system respectively.  $U_{pv}$  and  $I_{pv}$  represent the total voltage and current, respectively.

Which algorithm is used to solve a photovoltaic energy storage system?

The ADP algorithm is used to solve formula (9), and the power constraint conditions of the photovoltaic energy storage system are fully considered.  $k$  is used to express the iteration times of ADP algorithm, and the expression of optimal voltage coordination control strategy for photovoltaic energy storage system is as follows:

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