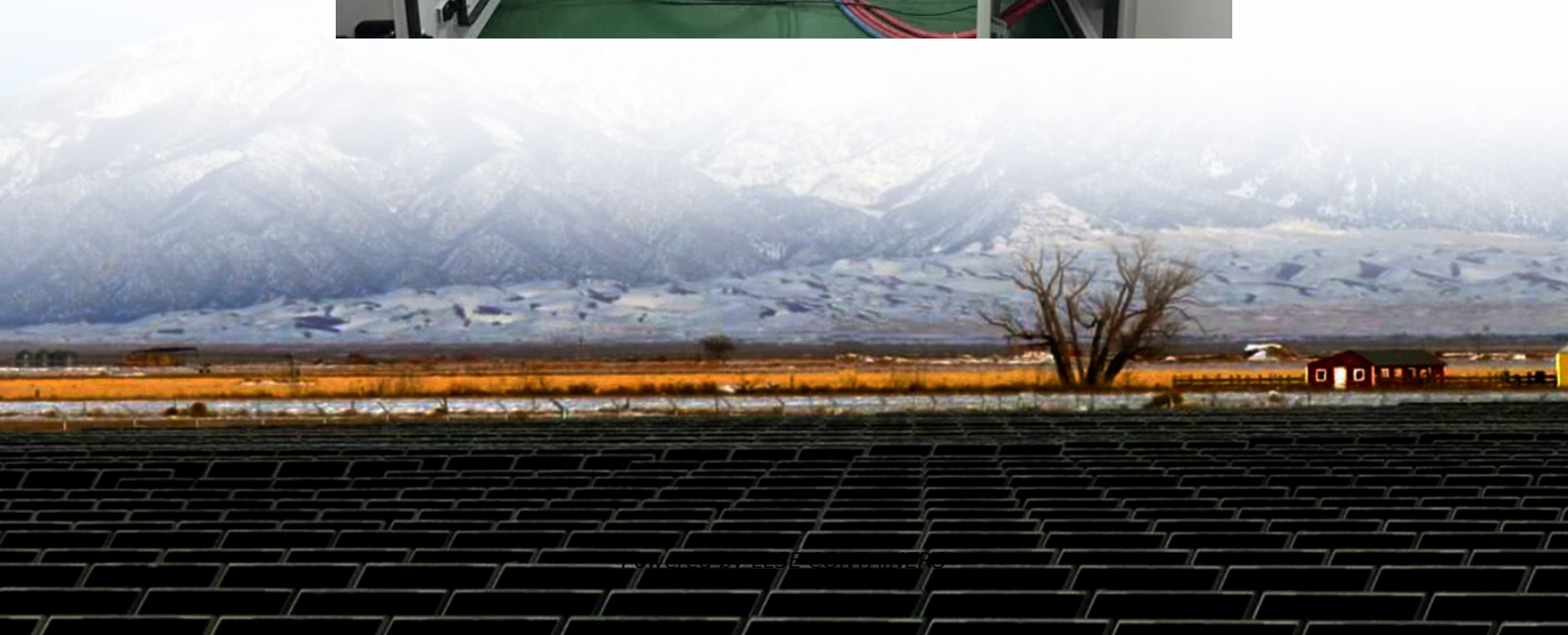


# Inverter zero sequence voltage





## Overview

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How to remove the zero-sequence voltage caused by the inverter?

Adding the opposite phase value to the final three-phase voltage reference values to cancel the voltage out. The above procedure is used to calculate and remove the zero-sequence voltage caused by the inverter at each carrier cycle. In the paper, the zero-sequence current reduction method caused by the inverter is defined as method-A.

Why does a 6 step inverter have a zero-sequence current?

In the case of 6-step operation on one side, the zero-sequence current increases due to odd-order harmonic components because the output voltage of the inverter on one side is a square wave. In addition, it is necessary to consider higher motor speed when considering the high-power output.

What is the reduction method of zero-sequence current caused by the inverter?

In the paper, the zero-sequence current reduction method caused by the inverter is defined as method-A. 4.3 Reduction Method of Zero-Sequence Current Caused by Motor The zero-sequence voltage caused by the motor ( $v_0$  motor) is generated by the harmonic component of the back-EMF.

What is a zero-sequence voltage?

sequence voltage. For the circuit with open-end winding PMSM, zero-sequence current is not necessarily zero because there is a path where the DC-bus is common. In the zero-sequence voltage equation of Eq. (3),  $L_0$  is small value. The zero-sequence current is easily excited by zero-sequence voltage.



## Inverter zero sequence voltage

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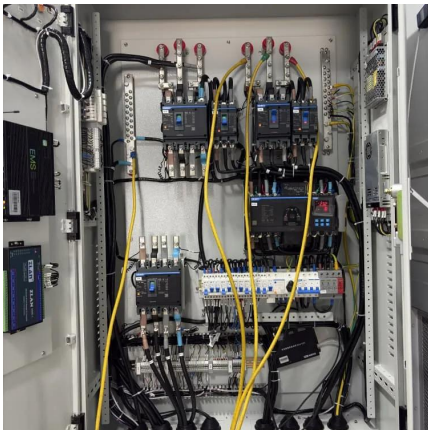






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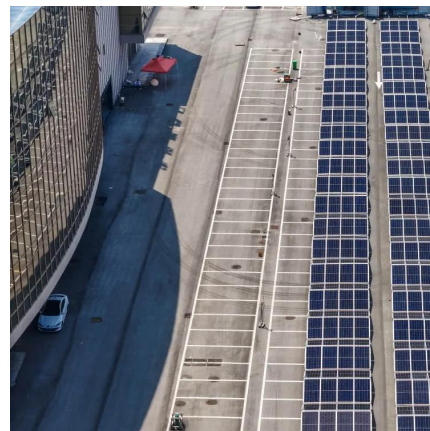


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