

### **SolarInnovate Energy Solutions**

# Three-phase inverter overload multiples







#### **Overview**

What is a two-level three-phase inverter?

The predominant two-level three-phase inverters apply Pulse Width Modulated (PWM) voltages to the motor wind-ings, which potentially lead to, e.g., bearing currents, High-Frequency (HF) harmonic losses, over-voltages be-tween the coils and Low-Frequency (LF) oscillations at the neutral point inside the motor.

What is a frequency inverter overload?

The motor can rotate, but the running current exceeds the rated value, which is called overload. The basic reflection of overload is that although the current exceeds the rated value, it does not exceed the rated value by a large margin, and generally does not form a large impulse current. What are the main causes of frequency inverter overload?

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What causes overload tripping?

The unbalanced three-phase voltage causes the operating current of a certain phase to be too large, leading to overload tripping. It is characterized by uneven heating of the motor, which may not be found when reading the running current from the display screen (because the display screen only displays one phase current).

What happens if a 3 phase inverter is not balanced?

If the three-phase voltage at the motor side is not balanced, the three-phase voltage at the inverter output side should be checked again. If it is unbalanced, the problem is inside the inverter. If the voltage balance of the inverter output, the problem lies in the circuit between the inverter and the motor.

What causes a frequency inverter to tripping?



1.Wrong action. The fault occurred in the current detection part of the frequency inverter, and the detected current signal was too large, leading to tripping. 2.Heavy mechanical load. The main feature of heavy load is the heating of the motor, which can be found by reading the running current from the display screen. 3.

What happens if an inverter is overloaded?

Once the unit has exceeded one of the overload parameters (typically current limit or AC voltage drop), it will go into an overload alarm state. The overload alarm state will switch off the AC output to the loads, after 30 seconds, the inverter will attempt to restart. If the overload condition has cleared, it will return normal operation.



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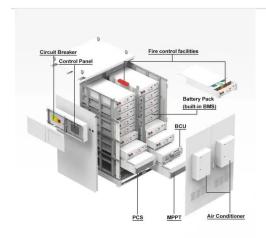
### Studying the effect of overmodulation on the output voltage of three

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