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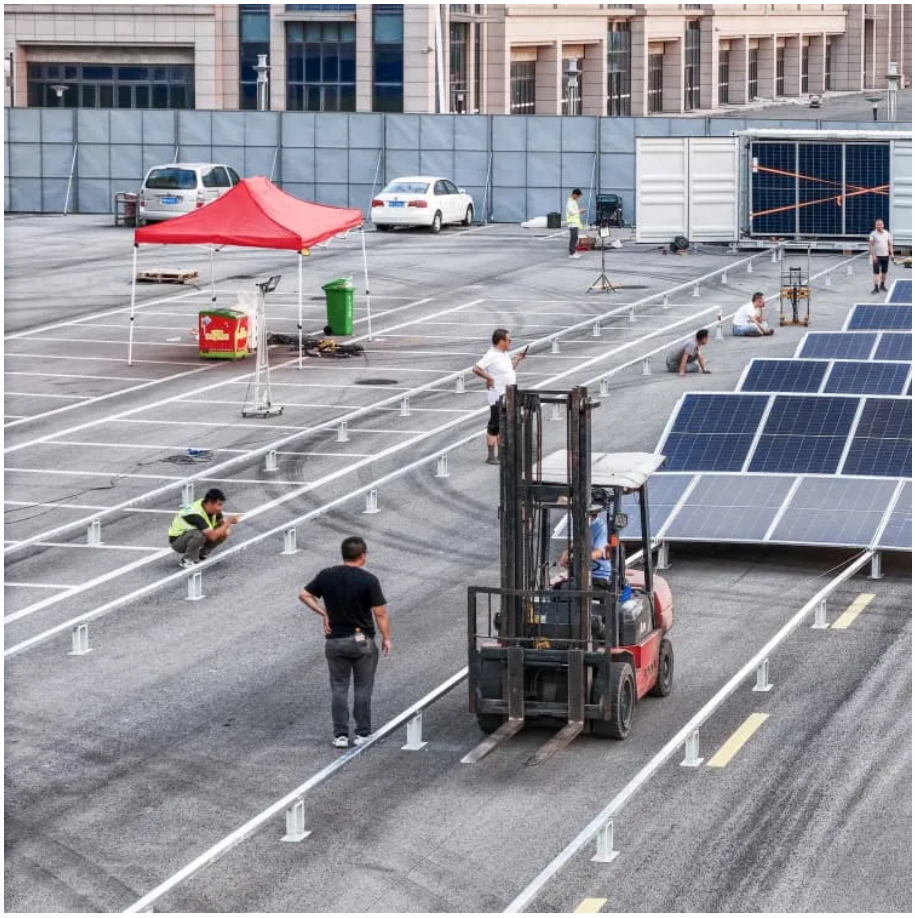
Three-phase inverter auxiliary power supply



Overview

What is a 3 phase auxiliary power supply for 150W dual output SMPS?

1. INTRODUCTION This application note deals with the design of a 3-Phase auxiliary power supply for 150W dual output SMPS, using the L5991 PWM driver and the STC08DE150 ESBT as main switch. The combination of these ST's parts aims at obtaining a high efficiency solution for high DC input voltage, typical requirement of any three phase application.

What are three-phase inverter power stages?

Three-phase inverter power stages are the fundamental block of servo drives, solar inverters, and variable frequency drives. Three-phase inverters convert the DC bus voltage to three-phase AC voltage with adjustable magnitude and frequency depending on the application. The three-phase inverters use IGBTs as semiconductor switches.

What is a three-phase inverter used for?

Three-phase inverters function as variable-frequency drives to control the speed of AC motors and for high power applications such as HVDC power transmissions. The typical application of a three-phase inverter using six isolated gate drivers is shown in Figure 1.

How do three phase inverters work?

The three-phase inverters use IGBTs as semiconductor switches. The fundamental frequency of the three-phase output generated by the inverter is controlled by the PWM signals generated by the MCU.

How many gate drivers does a 3 phase inverter use?

The typical application of a three-phase inverter using six isolated gate drivers is shown in Figure 1. Note that each phase uses a high-side and a low-side IGBT switch to apply positive and negative high-voltage DC pulses to the motor coils in an alternating mode.

What is an IGBT in a 3 phase inverter?

IGBTs are used in three phase inverters for variable-frequency drives to control the speed of AC motors. This reference design uses a Fly-Buck topology and is intended to operate from an unregulated 24-V DC input. The Fly-Buck converter circuit can be deemed a combination of a buck converter on the primary side and a flyback-like secondary side.

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