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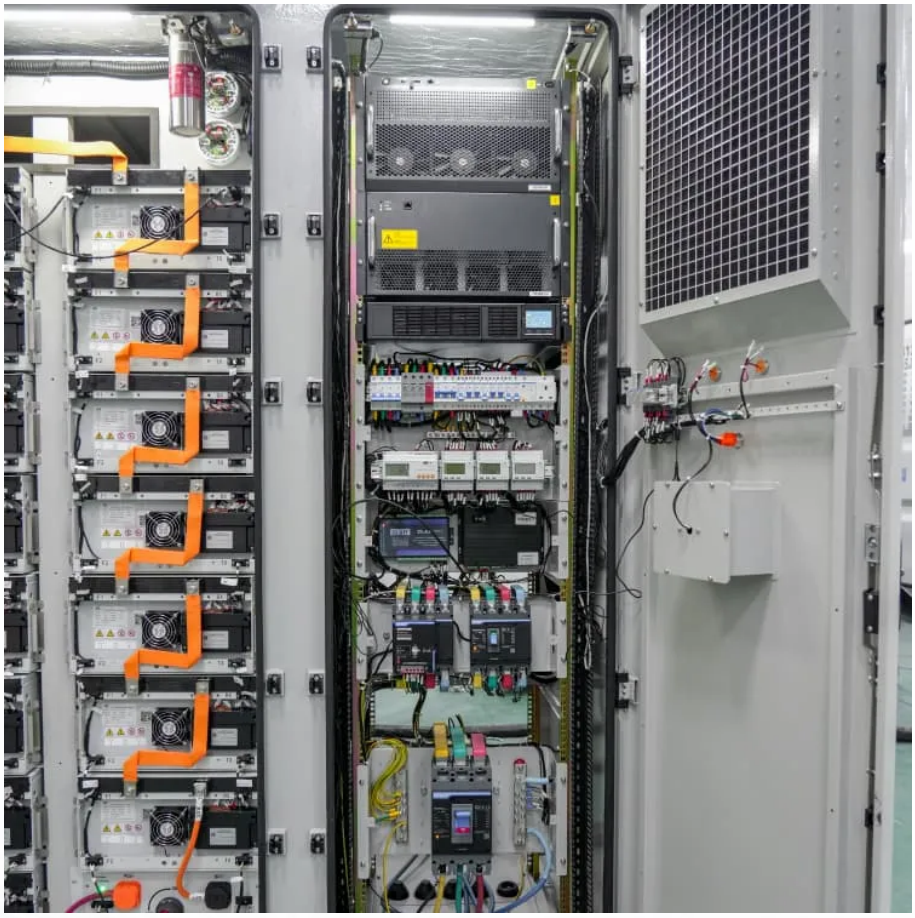
Shortwave base station linear power supply circuit



Overview

What is a linear power supply?

Linear power supplies have been around for several decades, long before the advent of semiconductors. Linear PSU’s can be fixed, for example, as a 5-V supply that you might need for a logic circuit, or several fixed supplies needed for a PC (+5, +12, or -12V). On a bench lab-type PSU, you would want to use a variable PSU.

What is a 3-channel linear power supply?

This document describes the design, simulation, construction and characterisation of a versatile 3-channel general-purpose benchtop linear power supply. Features include current limiting and digital control of the supply parameters. The two main channels have a voltage range of 0-32 V and a constant current range of 0-4 A.

What is a general-purpose benchtop power supply?

A general-purpose benchtop power supply must have two supplies at a minimum to allow for the powering of split-rail analog circuits. The addition of a third, lower voltage supply is useful for powering mixed analog and digital circuits. Current limiting is indispensable for R&D purposes to minimise circuit destruction under fault conditions.

What is the minimum output voltage for a linear power supply?

C8 and C9 give noise immunity and can be 10uF. C10 and C11 are 1uF and C4 and C7 are 1000uF. The minimum output voltage is about 1.25V. Hope this article has answered any questions you have about linear power supplies, but leave a comment below if you need any further explanation!

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