

## PDEOZE PowerContainer

# Outdoor power supply is resistant to high temperature



## Overview

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Pick power supplies that work in very hot or cold places. Choose ones rated from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  for best use. Check the IP rating to see if they block dust and water. Why should you choose a wide temperature power supply?

To address such extreme environments, users are advised to opt for wide temperature (Wide Temperature) power supplies. These devices are designed to provide stable power even under high or low-temperature conditions, ensuring the reliable operation of connected equipment.

What happens if a power supply reaches a high temperature?

When the ambient temperature exceeds this range—such as during scorching summers or freezing winters—the power supply may fail to operate normally. To address such extreme environments, users are advised to opt for wide temperature (Wide Temperature) power supplies.

What is the operating temperature of a power supply?

The operating temperature specified for a power supply refers to the temperature of the environment around it, rather than the external ambient temperature of the equipment. Typically, the operating temperature range for power supplies is between  $0^{\circ}\text{C}$  and  $40^{\circ}\text{C}$ , with some products able to reach standards of  $0^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ .

Does a wide temperature power supply overheat?

Although wide temperature power supplies utilize internal components with superior heat resistance, these materials still have thermal and efficiency limits. When the ambient temperature exceeds  $40\text{--}50^{\circ}\text{C}$  (depending on the product design), internal components may overheat, leading to performance degradation and reduced output power.

How does temperature affect power supply performance?

When external temperatures are high, cooling efficiency decreases, making it

harder to dissipate heat effectively. This leads to a continuous rise in internal temperature, creating a vicious cycle that negatively affects the power supply's performance on multiple levels. The consequences of high temperatures are both extensive and severe.

Why does a power supply increase internal temperature?

This is particularly pronounced in enclosed devices, where the power supply generates heat during operation due to energy losses, and additional heat from other components, such as the motherboard, further elevates the internal temperature.

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These conditions require an industrial UPS specifically manufactured to withstand high temperatures - one that has been agency-certified (e.g., UL) to have a wide operating ...

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