

380V High-Frequency Switching Power Supply for Distribution Network Automation



AI Overview

A 380V high-frequency switching power supply efficiently converts three-phase 380V AC to stable DC, offering compact design, high efficiency, and reliability for industrial automation and distribution networks.

Overview

A 380V high-frequency switching power supply is designed to operate with a 380V AC input, commonly found in three-phase industrial and commercial electrical systems. These units convert high-voltage AC to regulated DC output using high-frequency switching techniques, such as buck, boost, or buck-boost topologies, resulting in smaller size, lighter weight, and higher efficiency compared to traditional linear power supplies. They are essential for distribution network automation, providing stable power to control systems, sensors, and actuators.

Key Features

- Input Voltage Range:** Typically 380V AC $\pm$ tolerance (304V–456V AC) to ensure compatibility with local distribution networks.
- Output Voltage and Current:** Can vary depending on application; examples include 24V DC at 40A (960W) or high-power units up to 650V DC at 230A.
- High-Frequency Switching:** Improves efficiency (>90% at full load), reduces heat, and allows compact transformer design.
- Protection Mechanisms:** Overload, short-circuit, and thermal protection with automatic or manual restart options.
- Mounting and Form Factor:** DIN rail or cabinet installation; modular designs allow scalability and easier maintenance.
- Monitoring and Communication:** Advanced units support RS485, Modbus, and remote management for smart factory integration.
- Compliance:** Meets international safety and EMC standards such as IEC/EN 60950-1, IEC/EN 61000-3-2, IEC/EN 61000-4, UL, CE, and CB Scheme.

Applications in Distribution Network Automation

Industrial Auto...

Article Content

ATV312HU40N4

Schneider Electric USA. ATV312HU40N4 - variable speed drive, ATV312, 5 HP, 9.2 kVA, 150 W, 380 to 500 V 3 phase supply.

Course Title Instructor(s)

Power architectures are changing rapidly to HVDC (270-380-600-700V) for high efficiency power distribution. New standards and components have simplified the challenge of stepping down from

China 380vac Power Supply, 380vac Power Supply Wholesale,

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Distribution Automation: Enhancing Efficiency and

The successful implementation of distribution automation can revolutionize power distribution, leading to more efficient, reliable, and

High-frequency power supply

Find your high-frequency power supply easily amongst the 52 products from the leading brands (Wisman High Voltage Power Supply, Voita, Kikusui, ...) on

S8VK-T Switch Mode Power Supply (120/240/480/960 W Models

Switch Mode Power Supply (120/240/480/960 W Models) Renewal of 400 V, 3-phase standard type. 480 W/960 W feature PFC for lower input current and higher efficiency (93% typ.)

Press | Company | Siemens

Expansion of production of high-efficiency power distribution systems for data centers, e-mobility and industrial automation...

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Fujian Guozhiyun Information Technology Co., Ltd. is a professional company engaged in electrical automation, dedicated to providing customers with overall power distribution and automation

What Is a Switching Power Supply (SMPS)? | Tektronix

Discover what a switching power supply (SMPS) is and how it efficiently converts AC to DC using high-frequency switching. Learn its

Switch mode power supplies

Switch Mode Power Supply (240/480/960-W Models) S8VK-WB Even more compact three-phase 380 to 480 V input power supplies. Reduces wiring work with the Push-In Plus terminals. With a line-up that

3 Phase AC

Designed to meet the needs of high power applications. Our 3 phase input power supplies are designed to operate from a variety of global 3 phase sources,

Electric power distribution

A 50 kVA pole-mounted distribution transformer Electric power distribution is the final stage in the delivery of electricity. Electricity is carried from the transmission

380v switching power supply

The 380V switching power supply supports critical networking infrastructure by delivering clean, uninterrupted power to communication devices. These power supplies are commonly used in

Power system architectures for 380V DC distribution in telecom ...

380V DC distribution is becoming a necessary choice for new telecom and datacenter power infrastructure. As state-of-the-art computing, routing and optical hub equipments continue to

S8VK-WB Switch Mode Power Supply (240/480/960-W

Switch Mode Power Supply (240/480/960-W Models) Even more compact three-phase 380 to 480 V input power supplies. Reduces wiring work

GZDW | Intelligent High Frequency Switching Power

Modular design using high-frequency switch power supplies with N+1 hot standby. Smooth adjustment of output voltage and current. Distributed multi-level

Switched-mode power supply

Switched-mode power supplies can also be substantially smaller and lighter than a linear supply because the transformer can be much smaller. This is because it

380 Vdc Architectures for the Modern Data Center

The adoption of 380 Vdc increases reliability, improves power quality, and eliminates the need for complex synchronization circuits associated with multi-source ac distribution. However, many data

High-frequency transient suppression in the distribution network ...

Time- and frequency-domain analyses reveal that fault-induced EFT pulse groups generate high-frequency electromagnetic interference (EMI) during fault isolation. This interference

380 VDC Input Supplies Enable Data Centers to Use

Vicor's Gary Gill says that using high-voltage DC for power distribution offers tangible and significant benefits for both sourcing options and system end-to-end

Distribution Automation

1 Introduction Distribution automation is an important method to improve the reliability, quality and capacity of power supply, and helps to realize the efficient and economic operation. It is also one of

380V High-Power Pulse Oxidation High-Frequency Switching Power

We are not only a manufacturer of switch mode power supplies, but also your reliable energy solution partner. We promise that all products come with a one-year free warranty and lifetime technical support.

Regulated Power Supply, 380...500V AC, 24V, 40A, 3

It is a regulated switch mode power supply. It has a rated input of 380V to 500V

Modeling and Simulation of High-frequency Switching Power Supplies

This high-frequency switching reduces the size of passive components like inductors and capacitors, leading to compact power supply designs. However, the switching process generates

380v switching power supply

Discover high-quality 380V switching power supplies, from \$12 to \$2175, ideal for stage lighting, UV curing, and more. Suitable for distributors, with pricing starting at just 1 unit.

Regulated switch power supply, modicon power supply,

Schneider Electric USA. ABL8WPS24200 - Regulated switch power supply, modicon power supply, 3 phases, 380 to 500V AC, 24V, 20A.

IEC homepage

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