

# Intelligent Heating and Dehumidifier for Distribution Box



## Overview

Analysis of Two Dehumidification Solutions for Power Distribution Walton intelligent semiconductor dehumidifier solves condensation & high humidity problem.

## Key Takeaways

An intelligent dehumidifier heater in a distribution box combines dehumidification and heating to protect electrical equipment from moisture, condensation, and insulation failures.

## Function and Purpose

Intelligent dehumidifier heaters are designed to control and maintain optimal humidity levels inside electrical cabinets and distribution boxes, preventing condensation, fog, and moisture-related electrical faults. By reducing humidity, they protect insulation, prevent creepage and flashover, and enhance the reliability and safety of electrical systems in substations, switchgear, and other power equipment.

## Technology

These devices typically use semiconductor Peltier refrigeration technology or heating dehumidification technology. Moist air is drawn into the dehumidifier, where water vapor condenses via a semiconductor refrigeration mechanism and is discharged through a water pipe. Some models integrate digital temperature and humidity sensors with advanced process control for real-time monitoring and automatic adjustment.



## **Intelligent Control Features**

Modern intelligent dehumidifiers include: Microcomputer processing chips for anti-interference and precise control. Digital displays showing current and set values of temperature and humidity. Automatic control of humidity levels based on sensor readings.

Communication protocols for integration with monitoring systems, allowing unique device addressing and function commands. External heater connections via passive NO contacts to provide additional heating when needed.

## **Installation and Compatibility**

These devices are suitable for switchgear, terminal boxes, and other electrical enclosures. They can operate in harsh environments, including strong electric and magnetic fields, wet conditions, and low temperatures. Enclosure materials vary, including sheet metal, aluminum alloy, and ABS, depending on the model.

Power supply options typically range from AC/DC 85–265V, with low power consumption (around 20W) for efficient operation.

## **Benefits**

Prevents moisture-related electrical failures. Maintains stable operation in high-humidity or low-temperature environments. Enhances grid safety and reliability.

Supports long-term operation in harsh conditions without frequent maintenance. Intelligent dehumidifier heaters are essential for ensuring the longevity and safety of electrical equipment in distribution boxes, particularly in environments prone to high humidity or condensation.

## **Article Content**

Analysis of Two Dehumidification Solutions for Power Distribution

Walton intelligent semiconductor dehumidifier solves condensation & high humidity problems for power distribution cabinets and terminal boxes, far better than traditional heating dehumidification methods.

Electrical Cabinet Dehumidifier

Blue Jay DH series electrical cabinet dehumidifier is a product using semiconductor Peltier condensation dehumidification technology, which is specially designed for power facilities and is more convenient

Smart dehumidification device, mini CS100 model, 20W power

The smart dehumidification device uses semiconductor refrigeration to actively draw humid air from a sealed space into the dehumidification duct under the action of a fan.

#### Walton WDY-D550 Intelligent In-Cabinet Dehumidifier

Designed to address the stringent moisture protection needs of industrial power systems, the Walton WDY-D550 is the professional choice for reliable in-cabinet dehumidification.

Intelligent moisture removal device for switchgear cabinets

Smart dehumidification device, distribution cabinet semiconductor dehumidification, 30/45/65W aluminum alloy dehumidifier switchgear distribution box anti

PTC18 Comb-Shape Heater, 12/24/220V, Constant Temperature

Intelligent dehumidification and moisture-proof: specially designed for enclosed spaces such as distribution boxes and control cabinets to keep internal components dry and ensure equipment safety.

#### Intelligent Dehumidification Unit (IDU)

Designed specifically for switchgear cabinets, pad-mounted transformers, control cubicles, ring main units (RMUs), and outdoor terminal boxes, the IDU effectively mitigates the risks associated with

#### DH3-60 Electrical Enclosure Dehumidifier

The DH3-60 Electrical Enclosure Dehumidifier utilizes semiconductor refrigeration technology to create an ultra-compact, highly efficient, and energy-saving

Electrical cabinet dehumidifier

Intelligent Enclosure Dehumidifier (semiconductor dehumidifier) is a device used to control and maintain the environmental humidity inside the electrical cabinet.

#### Intelligent Cabinet Dehumidifier Dhr-50

Leelen is one of the largest and reputed manufacturers of electrical components for switchgear. (Used for switchgear Like AIS, GIS, RMU, SF6,

#### Walton WT-H600 Intelligent Semiconductor Dehumidifier

The Walton WT-H600 intelligent semiconductor dehumidifier uses Peltier effect technology to prevent condensation in high-voltage power cabinets, switchgear & wind power equipment. Reliable, low

120W RS485 Smart Air Dryer With Heating Function Industrial Intelligent ...

120W Smart Dehumidifier with Heating Function This 120W RS485 Smart Air Dryer features an intelligent heating function, ideal for maintaining optimal humidity levels in industrial cabinets and

Industrial Dehumidifier Mini Intelligent Electrical Cabinet ...

Voltage:AC220V Color: As Shown Material: Metal+Plastic Package Contents: 1\*Mini Intelligent Dehumidifier 1 water pipe Only the above package content, other products are not included.

Smart dehumidification device, stainless steel 120W, high-voltage ...

Smart dehumidification device, stainless steel 120W, high-voltage switchgear anti-condensation controller, distribution cabinet semiconductor dehumidifier

1pc Mini Intelligent Dehumidifier Electrical Cabinet Industrial ...

Free delivery and returns on eligible orders. Buy 1pc Mini Intelligent Dehumidifier Electrical Cabinet Industrial Dehumidifier Distribution Box Semiconductor Dehumidifier (CZCS880-DC12V) at Amazon UK.

Intelligent Power Distribution Box Solution

Intelligent power distribution box is composed of traditional leakage protector, air switch, AC contactor and KC868-H8. Compared with the traditional power distribution box, it is safer to cut off the strong

Electrical Cabinet Mini Intelligent Dehumidifier Industrial ...

Product description Akfldms Color: As Shown Material: Metal+Plastic Package Contents: 1\*Mini Intelligent Dehumidifier 1 water pipe 1 humidity sensor Only the above package content, other

Pasuihcay Electrical Cabinet Mini Intelligent Dehumidifier ...

Product description Pasuihcay Color: As Shown Material: Metal+Plastic Package Contents: 1\*Mini Intelligent Dehumidifier 1 water pipe 1 humidity sensor Only the above package content, other

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

