Explosion-proof AC power cabinets for intelligent computing centers



Overview

Electrical cabinet air conditioner The PAC series is manufactured by Plastim Electric, and is a cabinet air conditioner, which can be operated with a power.

Key Takeaways

Explosion-proof AC power cabinets ensure safe, reliable climate control in high-risk data centers by preventing ignition of flammable atmospheres while maintaining precise temperature and humidity. Key FeaturesExplosion-proof AC cabinets are engineered to operate safely in environments where flammable gases, vapors, or dust may be present. Core design principles include: Flameproof enclosures (Exd): The housing is made of carbon steel or other robust materials to withstand internal explosions and prevent flame propagation to the surrounding environment.

Sealed electrical systems: All circuits, junction boxes, and components are fully enclosed to isolate sparks and prevent ignition. Spark prevention and anti-static components: Motors, fans, and other moving parts are designed to eliminate friction or electrical sparks, often using brushless DC motors and anti-static fan blades. Surface temperature control: External surfaces are engineered to remain below the auto-ignition temperature of hazardous substances in the area.

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Precision climate control: Temperature and humidity are tightly regulated, often with ±0. 5℃ temperature accuracy and ±5% RH humidity accuracy, ensuring optimal conditions for sensitive IT equipment. Certifications and StandardsExplosion-proof AC units for data centers typically comply with internationally recognized standards: ATEX Certification: Required in the EU for equipment in potentially explosive atmospheres, classifying zones based on gas or vapor presence (e.g., Zone 1, Zone 2),.

IEC

Ex Certification: Provides a globally recognized mark of conformity for hazardous area equipment. National and industry standards: Many manufacturers also adhere to local electrical and safety codes to ensure reliable operation.

Applications in Intelligent Computing Centers

Data centers and intelligent computing centers benefit from explosion-proof AC cabinets because: Preventing ignition: Micro-arcing from short circuits or aging cables can ignite flammable gases; explosion-proof ACs mitigate this risk. Redundant systems: Many units offer dual or backup cooling to maintain uptime in critical IT environments. Integration with BMS: Units can be connected to building management systems for remote monitoring and control, ensuring operational efficiency and safety.

High ambient temperature operation: Some models are designed for extreme conditions, supporting high-capacity cooling needs. Example ProductsCNWINNEX Explosion-Proof Precision AC: Features full-process explosion-proof design, sealed electrical systems, brushless DC motors, and precise temperature/humidity control for high-risk data centers.

Ex-

Machinery ATEX-certified AC units: Offer inverter models with R32 or R-410A refrigerants, redundant systems, and IP66-rated remote control for hazardous areas.

Yitongex Explosion-

Proof Cabinets: Provide integrated solutions including AC, HVAC, and control panels for industrial and computing environments.

Conclusion

For intelligent computing centers, explosion-proof AC power cabinets are essential to ensure both safety and operational reliability. Selecting units with proper certifications, flameproof enclosures, sealed electrical systems, and precise climate control is critical to protect sensitive IT infrastructure in hazardous environments.

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Article Content

Electrical cabinet air conditioner

The PAC series is manufactured by Plastim Electric, and is a cabinet air conditioner, which can be operated with a power supply rating of a single-phase 230 V at either 50 Hz or 60 Hz.

Explosion-Proof AC

Explosion-Proof Cabinet AC Application: Electrical control room, analyser instrument room, control panel, Continuous Emissions Monitoring (CEMS) and etc; Nominal

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