

Fireproof electrical distribution box standard



Overview

Fire protection enclosures ABB offers an innovative enclosure system for fire prevention, which is constructed of fireproof materials, features optimum fire

Key Takeaways

Fireproof electrical distribution boxes are designed to maintain circuit integrity during fires, using fire-resistant materials, certified fire ratings, and protective enclosures suitable for industrial, commercial, and hazardous environments. Key Features and Materials

Fireproof distribution boxes are typically constructed from steel, aluminum alloys, or high-grade thermoplastics, providing robust physical and thermal protection while resisting deformation under high temperatures. Thermoplastic enclosures are lightweight, non-conductive, and flame-retardant, suitable for both indoor and outdoor applications. Metal enclosures may be embedded in concrete walls for enhanced fire resistance and structural protection.

Fire Resistance Ratings

Fireproof boxes are classified according to fire endurance standards:

- F30/F90, I30/I90, E30/E90: Conform to DIN 4102 Part 2, providing 30 or 90 minutes of fire resistance for interior and exterior protection.

- UL 2196 / ASTM E119: Certification for two-hour fire endurance, allowing internal cables to withstand temperatures up to 1010°C .

- BS6387, BS EN 50200, BS8434-2: Tested for fire, water, and mechanical shock resistance at temperatures up to 970°C for 2-3 hours .

Environmental Protection

Many fireproof distribution boxes feature IP65 or higher ratings, ensuring:

- Complete protection against dust ingress (first digit '6')
- Resistance to low-pressure water jets (second digit '5') This makes them suitable for industrial facilities, construction sites, damp indoor environments, and outdoor installations .

Additional Specifications

- Mounting Options: Flush-mounted, surface-mounted, or floor-standing enclosures .
- Internal Components: Ceramic high-temperature terminal blocks, DIN rail-mounted terminals, and optional internal mounting plates .
- Hazardous Area Compliance: Some enclosures meet IECEx or ATEX standards for explosive atmospheres, suitable for Zones 1, 2, 21, and 22 .
- Ventilation: Fire-rated enclosures may include channels that automatically close during a fire to prevent flame propagation .
- Optional Features: Security lid fixings, wire lock screws, and color finishes (RAL 7001 standard, anodized, or unpainted) for customization .

Applications

Fireproof electrical distribution boxes are ideal for:

- Industrial and commercial buildings
- Data centers and high-traffic areas
- Underground facilities, tunnels, and parking garages
- Hazardous locations such as chemical plants, oil refineries, grain silos, and paint spray booths . These enclosures ensure continued operation of emergency systems, prevent fire propagation, and protect internal circuitry, combining advanced materials, intelligent design, and rigorous safety standards.

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