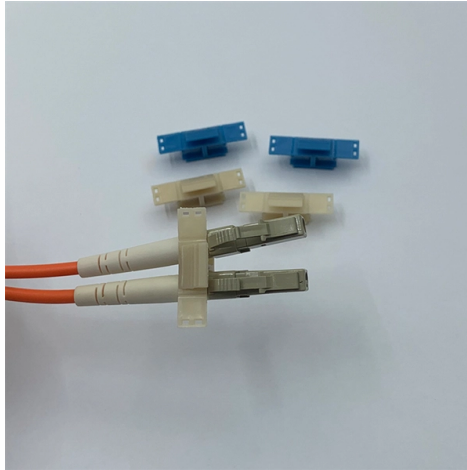


Aluminum Alloy Explosion-proof Distribution Box Housing Model



Overview

Standard Explosion-Proof Distribution Box BX51 | ProductsThe enclosure is formed by die-casting aluminum alloy or welding carbon steel or stainless steel.

Key Takeaways

Aluminum alloy explosion-proof distribution boxes are robust, corrosion-resistant enclosures designed for safe electrical distribution in hazardous environments, compliant with international explosion-proof standards.

Material and Construction
These housings are typically made from high-quality aluminum alloy, often low-copper or copper-free, which ensures durability, corrosion resistance, and lightweight handling . The surface is usually powder-coated or electrostatically sprayed, providing additional protection against environmental factors and mechanical wear . Some designs include specialized hinge structures to protect flameproof joints during opening and closing, extending service life .

Safety Standards and Certifications

Aluminum alloy explosion-proof boxes comply with GB3836.2-2000, ATEX, and IECEx standards, making them suitable for Zone 1 and Zone 2 (gas) and Zone 21 and Zone 22 (dust) hazardous areas . They are designed to prevent sparks or arcs from igniting flammable gases or dust, with options for Ex d (flameproof), Ex e (increased safety), and Ex i (intrinsic safety) configurations .

Features and Functionality

- Protection Level: Typically IP54 or higher, ensuring resistance to dust and water ingress .
- Electrical Safety: Equipped with overload, short-circuit, and leakage protection, and can include alarm devices for monitoring .
- Temperature Control: Options include digital thermostats or BJT thermostats for automatic freeze protection in cold environments .
- Modularity: Many boxes allow multi-channel outputs (1-12 channels) and can be combined or customized to fit specific distribution systems .
- Component Compatibility: Pre-assembled enclosures may include Ex-certified terminal blocks, cable glands, and accessories, ensuring all internal components meet explosion-proof requirements .

Applications

These housings are widely used in industrial plants, chemical facilities, oil and gas operations, and other hazardous locations where flammable gases, vapors, or dust are present. They provide a safe and reliable solution for electrical distribution, control stations, and monitoring equipment in extreme conditions .

Advantages

- High mechanical strength and impact resistance
- Corrosion and weather resistance for indoor and outdoor use
- Compliance with international safety standards
- Ease of installation and maintenance
- Customizable for specific industrial requirements Aluminum alloy explosion-proof distribution boxes combine robust construction, certified safety, and versatile functionality, making them essential for maintaining electrical safety in hazardous environments .

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

