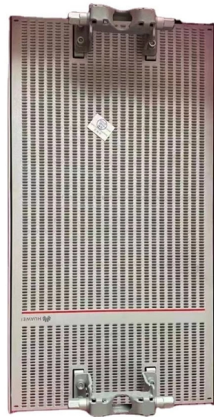


IIB-level explosion-proof distribution box design



Overview

Explosion-Proof Distribution Box Buying Guide 2026: Specs, Variants. For 2026 procurement cycles, an explosion-proof distribution box is most commonly sp.

Key Takeaways

An IIB-level explosion-proof distribution box must use a flameproof enclosure with precise flame-path design, robust materials, and compliance with EN 60079 standards to safely contain internal explosions.

Key Design Principles



Flameproof Enclosure (Ex d IIB+H2): The enclosure must be capable of containing any explosion originating inside the box, preventing ignition of the surrounding atmosphere. This is achieved through a mechanically strong body and lid, with a flame-path interface that cools escaping gases to safe levels. For IIB gas groups, the flame-path is typically flat and rectangular, while IIC requires cylindrical or threaded paths for larger volumes . **Materials:** Stainless steel or copper-free aluminum is commonly used for corrosion resistance, high impact strength, and durability in harsh environments such as offshore, chemical, or oil and gas installations . The enclosure should withstand mechanical stress and thermal effects from internal explosions. **Component Integration:** The box can house a wide range of electrical components, including MCCBs, MCBs, contactors, relays, PLCs, meters, soft starters, and surge protectors. Proper spacing and mounting ensure heat dissipation and prevent internal sparks from propagating . **Cable Entry and Glands:** Standardized entry holes (e.g., M $\square$ x 1.5) or NPT plugs are used, with cable glands selected to maintain the flameproof integrity. Modular designs allow multiple boxes to be combined for complex distribution systems . **Standards Compliance:** Design must adhere to EN 60079-0 (general requirements for explosive atmospheres) and EN 60079-1 (flameproof enclosures). Certification ensures the box is suitable for Zone 1 or Zone 2 hazardous areas and gas group IIB+H2 . **Customization:** Boxes can be tailored for multi-site control, motor start/stop, corotation, inversion, and monitoring functions. The number of cover components and side holes should match the dissipated power and mechanical strength requirements .

Practical Considerations

- **Flame-path length and gap:** Must be sufficient to cool hot gases and prevent external ignition. Longer paths are required for higher energy gases or larger enclosures .
- **Shape and assembly:** Rectangular enclosures are preferred for IIB due to easier panel assembly, while cylindrical designs are used for IIC areas .
- **Maintenance and durability:** Hinged panels and robust joints prevent damage during opening/closing, extending service life .
- **Environmental resistance:** Ensure IP rating and corrosion resistance for outdoor or marine applications . By following these principles, an IIB-level explosion-proof distribution box can safely operate in hazardous environments, providing reliable power and control distribution while containing potential internal explosions.

Article Content

GRP Ex Terminal Boxes

Explosion-proof GRP terminal boxes HTB1P terminal boxes, made of glass fibre reinforced polyester

Microsoft Word

Applications: These explosion proof junction boxes are used as classified enclosures, pull box, splice box, control panel, equipment

Distribution Boxes

BXJ93 Fibre Optic Splice Box Explosion-Proof Fibre Optic Termination Solution for Hazardous Locations Engineered for safety,

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

