Processing of rainproof holes in distribution boxes



Overview

Mass production real photos of Ouyue Electric's outdoor rainproof. Two real photos record two key nodes in the manufacturing process of outdoor rainproof.

Key Takeaways

Rainproof holes in distribution boxes are processed using precise machining combined with sealing techniques to maintain waterproof and dustproof performance.

Machining Methods

Holes in rainproof distribution boxes are typically created using drilling, milling, and tapping. Drilling is used for through holes or blind holes, milling for grooves or complex shapes, and tapping for threaded holes to accommodate screws or cable glands. These methods ensure that the holes are accurately sized and positioned without compromising the structural integrity of the box.

Sealing Techniques

To maintain rainproof performance, holes are often sealed with rubber gaskets, sealants, or specialized covers. Rubber sealing rings or silicone-based foams are commonly applied around cable entry points or switch interfaces to prevent water and dust ingress. For very narrow grooves or micro-distribution boxes, contour-accurate polyurethane or silicone foams are used, applied with precision dosing machines to ensure a seamless seal.

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Protective Coatings and Rain Covers

After hole processing, the box surface may receive a waterproof coating to enhance corrosion resistance and weatherproofing. High-strength rain covers can also be installed over openings to block direct rain while allowing ventilation for heat dissipation. Stainless steel boxes often undergo spraying or hot-dip galvanizing to improve surface finish and reduce adhesion of dust and water.

Design Considerations

Positioning of holes: Holes should be located to minimize direct exposure to rain, often under protective flanges or rain covers. Combination of methods: Machining, sealing, and coating are used together to meet IP or NEMA protection standards. Maintenance access: Seals and foams are designed to allow repeated opening and closing without losing waterproof integrity.

Advanced Features

Some rainproof distribution boxes include integrated rainproof mechanisms and dust removal systems, which prevent water from entering the box and remove accumulated dust from internal components, extending the service life of the equipment. By combining precise hole processing, effective sealing, protective coatings, and rain covers, manufacturers ensure that distribution boxes remain functional and safe in outdoor environments while maintaining their rainproof and dustproof properties.

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Enclosures and Distribution boxes | Sonderhoff

The lifelines of highly automated industrial production for electrical distribution and for the control and safety technology of manufacturing plants come together in

How can I seal the open knockouts in my electrical boxes?

Q: I have several electrical boxes in the basement with open knockouts that I want to seal. The holes are ¾ of an inch across.

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