

Article Overview

Production of outdoor power distribution boxes typically involves roll forming machines, hydraulic punching systems, bending machines, and PLC-controlled assembly lines for precise, durable, and customizable enclosures.

Key Production Equipment

1. **Roll Forming Machines** These machines shape cold-rolled or galvanized steel sheets into cabinet panels. They include multiple forming rollers, often made of GCr15 steel with quenching for hardness (HRC 56-65), ensuring smooth surfaces without scratches. Roll forming machines can handle panel widths from 150mm to 400mm and speeds of 2-8 m/min, accommodating various box sizes and thicknesses (0.8-1.2mm) for IP65/IP66-rated outdoor enclosures .

2. **Hydraulic Punching and Shearing Systems** Hydraulic presses are used to punch holes for cable entries, mounting points, and ventilation. These systems include automatic length measurement, positioning, and safety shutdowns. Shear devices cut panels to precise dimensions, while hydraulic power (typically 18.5 kW) ensures consistent performance .

3. **Box Bending Machines** Bending machines form the side panels and edges of the distribution boxes. They are equipped with molds for different box sizes and hydraulic power (around 3 kW) to achieve accurate bends. This ensures structural integrity and proper alignment for assembly .

4. **Uncoilers, Straighteners, and Servo Feeders** These components prepare raw metal strips for forming. Uncoilers handle coil weights up to 2 tons, straighteners with multiple rollers ensure flatness, and servo feeders control precise material feeding into the forming line .

5. **PLC-Controlled Electrical Systems** Modern production lines use PLC systems with touch screens for operator interaction, real-time monitoring, and automatic control of forming, punching, and bending processes. This allows both manual and fully automated operation, improving efficiency and safety .

6. **Safety and Quality Features** Production lines include emergency stop buttons, protective covers for moving parts, and digital displays for voltage, current, and workpiece length. High-quality bearings, motors, and inverters from reputable brands (Siemens, Omron, Schneider) ensure reliability .

Production Line Workflow

- o **Material Preparation:** Cold-rolled steel or galvanized sheets are uncoiled, straightened, and fed into the line.
- o **Panel Forming:** Roll forming machines shape the panels to required dimensions.
- o **Punching and Shearing:** Hydraulic systems create cable holes, ventilation slots, and cut panels to length.
- o **Bending:** Side panels and edges are bent to form the box structure.
- o **Assembly and Quality Check:** Panels are assembled, breakers and sockets installed, and final inspection ensures compliance with IP65/IP66 standards .

Customization and Applications



Outdoor power distribution box production equipment

Production equipment can accommodate custom sizes, multiple channels, and specialized features such as elevated stands, emergency stop buttons, and CEE industrial sockets. These boxes are widely used in construction sites, outdoor events, industrial facilities, shipyards, and renewable energy projects .

Summary

Manufacturing outdoor power distribution boxes requires a combination of roll forming, hydraulic punching, bending, and PLC-controlled automation. This ensures durable, weatherproof, and customizable enclosures suitable for demanding outdoor environments. Modern production lines also integrate safety features, real-time monitoring, and flexible configurations to meet diverse industrial and commercial needs .

A proper temporary power distribution box must do more than distribute electricity. It must protect people, protect

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?WIDE RANGE OF APPLICATIONS?The power socket box is easy to carry and has a wide range of applications, suitable for

Conclusion Safe and efficient power management requires reliable temporary power distribution boxes at construction sites, events,

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