

Article Overview

A push-pull distribution box is a modular device that bundles multiple sensor or actuator cables into a single master cable using M12 push-pull connectors for fast, secure, and tool-free installation.

Overview

Push-pull distribution boxes are designed to simplify cabling in industrial automation, machine construction, and intralogistics. They allow multiple signals and power lines from sensors and actuators to be combined into a single master cable connected to a controller or PLC, reducing installation time and minimizing wiring errors .

Key Features

- o Connection Method: Typically uses M12 push-pull female connectors or sockets, sometimes combined with M23 connectors for the master cable .
- o Tool-Free Installation: The push-pull mechanism allows secure, fast connections without tools, even in confined spaces, and supports high cabling density .
- o Status Indicators: Many models include LED indicators for signal status, enabling quick diagnostics .
- o Slot Configuration: Boxes can have multiple slots (commonly 4-8) with single or double slot assignments, supporting flexible wiring layouts .
- o Protection: Versions are available with IP67 protection, fully encapsulated housings, and optional shielding for reliable operation in harsh environments .
- o Flexible Wiring: Supports Y-distributors for connecting multiple signals per slot and allows on-site adjustment of cable lengths .

Advantages

- o Time Savings: Push-pull connectors reduce installation time by up to 80% compared to traditional screw connections .
- o Safety and Reliability: Secure connections prevent accidental disconnections and ensure consistent signal transmission .
- o Compact Design: Internal locking and countersunk ports allow for higher packing density and more compact device designs .
- o Versatility: Compatible with standard M12 screw connectors, push-pull fast-locking technology, and can be integrated into existing systems .

Applications

Push-pull type distribution box

- o Industrial Automation: Connecting sensors and actuators in production lines.
- o Machine Construction: Simplifying wiring in complex machinery.
- o Intralogistics: Bundling signals in automated storage and retrieval systems.
- o Explosion-Protected Areas: Certain M12 EX push-pull boxes are ATEX- and IECEx-approved for intrinsically safe circuits .

Installation Notes

- o Master cables can be connected via plug-in push-in spring connections or M23 connectors.
- o Push-pull connectors follow IEC 61076-2-010 standards for M12 and IEC 61076-2-117 for M23, ensuring cross-manufacturer compatibility .
- o Fully molded distributors protect the PCB from corrosive influences and allow tool-free assembly with snap-in locking covers . Push-pull distribution boxes provide a reliable, modular, and efficient solution for decentralized signal and power distribution, making them ideal for modern industrial and automation applications .

Learn the differences between distribution boxes, control boxes, and junction boxes.

This article covers the types, features, and advantages of power DB boxes, as well as their manufacturers

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What are Distribution Boxes and Their Importance? 1.1 What is the function of a

Distribution boxes, also known as electrical distribution boards or panels, are pivotal components in electrical systems, ensuring the

There are difference electrical boxes types that are crucial for encasing wire connections in

A distribution box ensures that electrical supply is distributed in the building, also known as a distribution board, panel board, breaker

The M12 push-pull distributor boxes not only offer time-saving installation, their tested safety and durability

The M12 push-pull distributor boxes feature a consistent, tool-free, and intuitive installation. Master cables

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