POWERLINK® AS Circuit Breakers—
Safe, Flexible, and Loaded with Features

Innovative System Combines Remote Switching and Overcurrent Protection in a Single Compact Package

POWERLINK AS circuit breakers are an integral part of Square D Company's POWERLINK remote power switching system. These compact devices perform both overcurrent protection and switching functions.

A plug-on control bus strip connects the circuit breakers to the control electronics, eliminating bundles of control wires and associated wiring errors. This innovative design reduces installation time and errors, and makes retrofit into existing buildings a practical option.

Features

Safety. POWERLINK AS circuit breakers have UL Listed short circuit withstand ratings. Many power switching devices cannot handle the available let-through fault current, presenting a hazard if they fail catastrophically.

Multi-pole switching. Single-, two-, and three-pole circuits can be switched.

Position indication. An integral on/off/ trip status flag means no more guessing about contactor or relay contact status.

Up to 30 amperes. 15, 20, and 30 ampere ratings are available.

Non-resistive loads. POWERLINK AS circuit breakers can handle the complex loads found in buildings today. They are rated for full life with inductive loads (0.8 power factor). They are also rated for HACR (heating, air conditioning, and refrigeration) service, as well as HID (high intensity discharge) lighting loads. Other switching devices must be derated for motor loads, and their lives are shortened by electronic ballasts.

Switch duty rated. 15 A and 20 A circuit breakers are SWD (switch duty) rated.

Long life. At 200,000 operations, they last up to six times as long as other common power switching devices.

Manual override. Each circuit breaker has a mechanical override that has priority over remote operation. The circuit can be turned off or on in a crisis.

Compact Size. Branch circuits run straight from the panelboard. No separate enclosure is required to hold relays or contactors.

The revolutionary POWERLINK AS circuit breaker

Principles of Operation

The core of a POWERLINK AS circuit breaker is the highly effective Square D trip mechanism. A 24 Vdc motor, along with a drive train and linkage, provides remote operation capability.

When the circuit breaker handle is in the on position, the motor and drive train can open and close the contacts. When the handle is in the off position or the circuit breaker is tripped, the contacts cannot be closed by remote operation.

The auto/manual mode selector switch, next to the main circuit breaker handle, provides mechanical override capability. In manual mode, the motor drive train is disconnected from the contacts. The circuit breaker handle then operates the contacts like a conventional circuit breaker.

A sensing device determines the presence or absence of voltage on the load-side terminal, and reports circuit breaker contact position. Thus, a true-positive-closed-loop feedback of actual contact status is achieved.

POWERLINK AS integrates components of a traditional lighting control system.
POWERLINK® AS Circuit Breakers—
Safe, Flexible, and Loaded with Features

Typical Applications
Using a remote power switching system to control lights and other loads when not needed can cut electric power bills and extend equipment life. Money is saved on energy bills, lamp costs, and maintenance.

The POWERLINK AS system is normally used in applications that require the flexibility, ease of programming, and compact size that simple contactors or relays cannot provide. The following are some examples:
• Non-lighting loads, such as motors and heaters, which often require multiple-pole capability and something more rugged than a relay
• Large areas with differing schedules or mixed occupancies
• Frequent changes to floor plans, requiring changes in control strategies
• Flexible scheduling with complex time clock and override functions
• Low voltage control wiring for safety
• Communications for network control, or complete power management
• Limited space in existing buildings or new construction

Retrofit
Adding a control system that uses traditional contactors or relays is difficult: finding room to mount the control panel is a problem, and rerouting all branch circuits to the control panel involves expensive labor charges.

But the POWERLINK AS system mounts in existing 20" (508 mm)-wide panelboard enclosures—requiring no extra wall space or rerouting of branch circuits. The control electronics mount on either the top or bottom of the panel interior, and require only six single-pole mounting spaces.

Benefits Summary
POWERLINK AS circuit breakers offer many advantages:
• Lower installed cost, because considerably less labor is needed.
• Plug-on circuit breakers make installation and maintenance simpler.
• Long life.
• Local status indication.
• Local override.
• "Soft" control, zones, and logic permit system configuration from the control electronics, rather than rewiring.

Contactors are reasonable, robust power switches—the logical solution for installations with a few zones of simple input-based logic, and no need for local indication or override.

Lighting relays are essentially inexpensive contactors. They are usually single-pole only, with relatively short lives and limited current-handling ability. Lacking the ruggedness of contactors and the convenience of POWERLINK AS circuit breakers, lighting relays are not the best choice for switching devices.

The bottom line? POWERLINK AS offers clear technical advantages in situations requiring compact size, communications, time clock functions, or moderate-to-complex control functions.

Specifications

Types
• Q0(B): 120/208/240 Vac class plug-on and bolt-on styles
• EHB: 277/480 Vac class bolt-on style only

Trip System
• Thermal-magnetic device
• VISI-TRIP® trip indicator

Operational Life
• 200,000 @ 80% load, 0.8 power factor

Current Ratings
• 15, 20, and 30 A

Interrupting Ratings*
• Q0(B): 10,000 A @ 120/208/240 Vac
• EHB: 14,000 A @ 277/480 Vac
  65,000 A @ 120/208/240 Vac

*Higher series ratings are available.

Standards
UL Listed, CSA certified

Ratings
HACR, HID, SWD

Load Terminations
Rated for 75°C conductors

Frequency
60 Hz

The complete POWERLINK AS system fits in a standard 20-inch-wide panelboard enclosure.