

A new design in remote operated breakers.



SIPOD with i-3 control technology

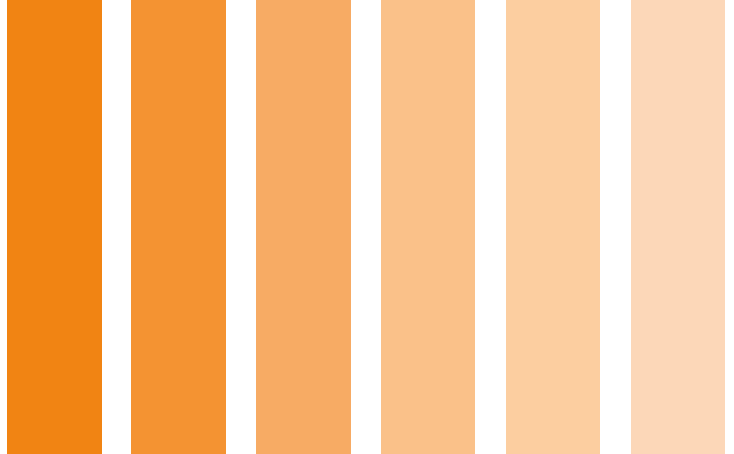
Answers for industry.

SIEMENS

P1 series lighting control with i-3 control technology

Siemens UL 489 listed SIPOD and BQD circuit breaker combination offers an innovative approach to controlling branch lighting circuits by:

- Allowing control of circuits with an off-the-shelf BQD breaker
- Implementing a blow closed mechanism that allows the SIPOD to assume the short circuit rating of an attached BQD breaker
- Providing a switching mechanism under full load that is rated for over 500,000 ON/OFF operations
- Introducing a modular design that increases system flexibility and reduces maintenance and replacement costs



The SIPOD

A switch to the design of remote operated breakers that provides a longer product lifetime and added flexibility.

As energy codes become more focused on the reduction of energy use, remote operated lighting control will continue to gain importance. Two commonly used methods for controlling lighting circuits are relays and remote operated breakers. Although relay based solutions provide more design flexibility, they require additional wiring and space. These issues are overcome with the use of "smart" breakers also known as remote operated breakers. There are various remote operated breaker designs on the market with different methods of switching and protection. Typically, these breakers are packaged as one unit. This eliminates the additional wiring and space required to implement a relay solution, but significantly reduces system flexibility.

Siemens is shining a new light on the remote operated breaker design with the introduction of the SIPOD (Siemens Control POD) which saves space and adds system flexibility. The SIPOD is a UL 489 listed circuit breaker accessory that adds a switching mechanism to a standard, off-the-shelf BQD breaker. The result is a flexible and compact solution for controlling branch lighting circuits remotely via a time schedule or an external signal (i.e. Building Automation System, switches, motion sensors, etc.)

In addition to the space savings provided by a single unit, remote operated breaker, Siemens BQD breaker and SIPOD combination features a modular design that minimizes the cost and impact of future system modifications. Figure 1 shows a pictorial representation of the three lighting control solutions described above: a) Relay Panel, b) Single Unit Remote Operated Breaker, and c) BQD circuit breaker and SIPOD combination.

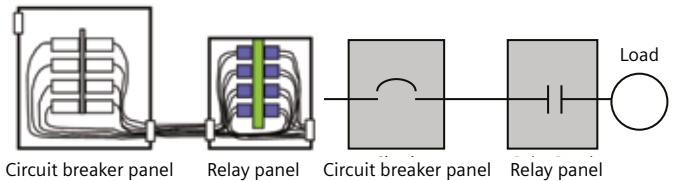


Figure 1a: Relay lighting control solution: requires separate circuit breaker and relay panels

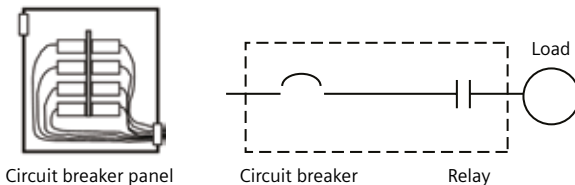


Figure 1b: Single unit remotely operated breaker solution: lighting control is integrated into circuit breaker

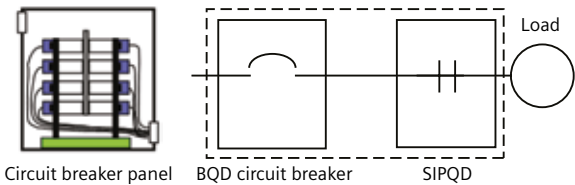


Figure 1c. Siemens BQD circuit + SIPOD combination: provides lighting control with a modular design for additional system flexibility.

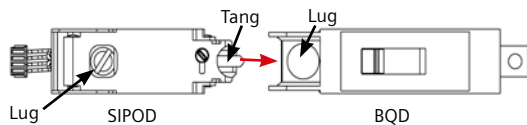
When evaluating any power distribution device, two important factors must be considered: safety and reliability. The SIPOD includes a blow closed mechanism allowing the circuit breaker to safely withstand short circuit and overload conditions. The SIPOD also leverages the maglatch concept to provide a reliable switching mechanism.

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What is a SIPOD (Siemens Control POD)?

A SIPOD is a remotely operated, electro-mechanical contactor that is attached to a Siemens BQD molded case circuit breaker. The SIPOD is a key component of the P1 Series Lighting Panel with i-3 Control Technology. The SIPOD provides an additional set of contacts in series with the circuit breaker that allow loads to be switched ON and OFF from a remote location or according to a time schedule. The SIPOD contacts are not intended to interrupt short circuit events, which is why the blow closed mechanism is necessary.

The SIPOD connects to the load side of the breaker using a conductor tab (tang) inserted into the breaker load lug. The load wiring is connected to the load lug of the SIPOD which is the same size as the circuit breaker lug. The SIPOD assumes the short circuit current rating of the attached BQD breaker due to the design of the blow closed mechanism.



What is the blow closed mechanism?

The blow closed mechanism is designed to keep the SIPOD contacts closed during short circuit and overload conditions, allowing the circuit breaker to interrupt the high current levels.

When relays are used, short circuit levels must often be restricted (often to 10kA or lower) which limits the electrical system to ensure proper operation during a short circuit or overload event.

The SIPOD avoids these concerns. The blow closed mechanism is designed to keep the SIPOD contacts closed during overload and short circuit events. The mechanism handles various current levels by generating forces that are: independent of the current level, proportional to the current level and proportional to the square of the current level.

The SIPOD switching mechanism is created through implementation of a maglatch mechanism. Other mechanisms used to switch remote operated breaker contacts, such as motors and solenoids, may produce additional noise, cause high inrush currents, and require additional parts.

The maglatch mechanism requires approximately 1.7A @ 24VDC for 2-25 milliseconds to break continuity in less than 4.5 milliseconds. The lower voltage results in a much longer mechanical life - more than half a million operations at full

load. Other remote operated devices are rated 200,000 ON/OFF operations and below. The maglatch mechanism allows the SIPOD to operate quietly (only the sound of the contacts striking can be heard) with lower power, and operate rapidly without unnecessary complexity.

System Voltage		Interrupting Ratings (Amps RMS)			
		120V AC	240V AC	277V AC	480Y/277V AC
1-pole	15-20A	65,000		14,000	
2-pole	15-20A		65,000		14,000
1-pole	30A	65,000		14,000	
2-pole	30A		65,000		14,000

To learn more about the SIPOD and the P1 series lighting panel with i-3 control technology, visit the product webpage:

www.usa.siemens.com/i-3

or contact your local Siemens sales office.



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