

OnBoard Racking 2™

PowerVac® Vacuum Circuit Breaker Racking Option For Improved Safety

SAFETY FIRST

At Powell, our primary goal is to the continued development of safety-centered products for the protection of personnel and assets. The newest development in this family of products is OnBoard Racking-2 automating the racking process of a PowerVac® circuit breaker.

Statistics indicate the manual racking of a circuit breaker on and off a live bus carries one of the greatest safety risks for operations personnel. Initiating breaker commands outside of arc flash boundaries would therefore minimize the likelihood for human harm in those rare cases. Additionally, breaker maintenance becomes more convenient when performed remotely, without the use of hard-to-wear PPE, or when heavy mechanical breaker attachments are required.

For those associated with the operation or maintenance of PowerVac® equipment, the OnBoard Racking-2 product is an optional safety solution for maximizing productivity and process uptime. The automated process simply affords greater efficiency and safety for personnel.

HOW DOES IT WORK

The PowerVac circuit breaker has been modified to accommodate a cell-based electric racking motor which moves the breaker in or out of the breaker cell. Once a remote command is issued, the integral motor, breaker status contacts, and cell mounted sensors report to the onboard electronics unit. Once all mechanical, electrical, and logical conditions are satisfied, the operation is initiated.

There are three (3) control functions available for each PowerVac circuit breaker: Rack-in, Rack-out, and Emergency Stop. The system will automatically rack out whenever it encounters an error preventing a successful racking process, ensuring the breaker remains in a safe state.

Another Industry First by Powell

Integral to the PowerVac® Circuit

Breaker Improved Safety for Operators

Remote Control of Racking Process

Available Only From Powell

Field Retrofit Program Available





“We are a large mining facility with many Powell substations on site. Arc flash is a concern of ours and the incorporation of OnBoard Racking into our existing equipment has greatly increased the safety benefits to our electrical staff.”

“The medium voltage switchgear in our facility is equipped with the OnBoard Racking system. We are now able to perform breaker tasks remotely from our Power Control Room which is safer and more efficient.”

CONTROL METHODS

Hand-Held Remote Controller - The OnBoard Racking-2 system includes remote control device with a 10m tether. This tether possesses a twist-lock connection to a port on the breaker door allowing a significant distance to be extended between the breaker and the control actions for maximum safety.

ModBus Communications - The breaker door port has a secondary communication output which can be used for tying in external operational commands to an HMI, PLC or other control device.

FITTING YOUR EQUIPMENT

Designed for installation in medium voltage PowerVac® switchgear for these switchgear ratings:

Voltage Rating	ML-17 Mechanism
5kV*	√
15kV*	√

*Field conversion to OnBoard Racking-2 is available via the Powell Global Service Division

For More Information:

Contact your local Powell sales representative or email questions directly to Info@powellind.com.

LOCAL MONITORING

Local substation access to OnBoard Racking control typically utilizes a PowlSmart® 10” HMI housed in a lockable, wall mounted enclosure located outside the arc flash boundary.



Intelligent operator control decisions are facilitated by a graphical one-line diagram displaying individual circuit breaker data. Upgrade to an industrial computer to integrate OnBoard Racking-2 with other substation IED’s such as protective relays, power meters, or system condition-based devices like the Powell BriteSpot™ thermal monitoring technology for the detection of hot spots on switchgear bus components inaccessible through infrared windows.

HAND-HELD REMOTE CONTROLLER

The Hand-Held Remote Controller with a 10 meter corded lanyard attaches to the breaker door with a quick quarter turn. It operates like a breaker control station or mimic panel, but much more informative.

The LED readout displays breaker status/warning messages while the illuminated control buttons indicate the available control choice to the operator. This controller allows the same control functions as the HMI interface and is properly used when operator is outside arc flash boundaries. It can be used in conjunction with the HMI for an emergency backup control station.

Powered by Safety®