Remote Switch Actuators (RSA)

CBS ArcSafe® Remote Switch Actuators are designed to remotely charge, close, and/or trip various styles and types of electrical equipment. Any remote switch actuator can be custom built for any electrical device you have available.

The remote switch actuators are most commonly assisted by strong magnets so that no modifications are required to your switchgear. This also allows operators to easily move the remote switch actuator from one breaker to another.

Each CBS ArcSafe remote switch actuator is custom built to your electrical equipment so that it can safely operate outside the arc-flash boundary.



OPTIONAL FEATURES

- Radio remote with up to 300-foot range
- 24V DC LED light
- Wireless video camera system with LCD monitor
- Rugged protective case assembly

BENEFITS

- Lightweight, portable construction
- Mechanical and/or electrical safety protection
- Adjustable to fit unique electrical equipment configurations
- Fast and easy to set up
- Reduced need for a full-body arc-flash suit
- Adds safety and helps comply with NFPA 70E
- No modifications required

Remote Switch Operators (RSO)



CBS ArcSafe **RSO**[®] (Remote Switch Operator) systems enable service personnel to stand outside the arc-flash protection boundary while operating electrical equipment, reducing or eliminating the need for a full-body arc-flash hazard suit. The RSOs can be used in conjunction with the CBS ArcSafe remote racking system or independently as a stand-alone device.

SO: US PATENT NO. 8.006.371B1

- . Operating pushbuttons, such as circuit breaker trip and close buttons
- 2. Operating levers, such as those equipped on motor contro
- Operating charging handles requiring single or multiple cycles
- 4. Operating rotary switches, such as pistol-grip SBM switches
- Engaging or disengaging mechanical interlocks, such as circuit breaker interlock foot-pedals

Federal Pacific Electric

All CBS ArcSafe products are compatible with all switchgear manufacturers including:

Federal Pioneer

General Electric

Hyundai

ITE

- ABB
- Allis-Chalmer
- Alstom
- BBC
- Cutler-Hamme
- Eaton

RSO-IAR

- . Operating pushbuttons, such as circuit breaker trip and close buttons
- 2. Operating levers, such as those found on motor control center buckets
- 3. Operating charging handles requiring single or multiple
- 4. Operating rotary and pistol-grip switches, such as breaker control switches
- . Engaging or disengaging mechanical interlocks, such as circuit breaker interlock foot-pedals

RSO-IV

- . Works with RRS-3 Single-Use Remote Racking Systems
- . Installing and removing any switchgear utilizing a rotary racking mechanism
- . Installing and removing any switchgear utilizing a non-rotary racking mechanism
- 4. Engaging or disengaging mechanical or electrical interlocks, such as circuit breaker interlock foot-pedals or buttons





Astro Controls, Inc.

www.astrocontrols.com Irving, Texas – Ph: 800-289-2757 Sales and service for all types of industrial molded-case circuit breakers, insulated case circuit breakers, and motor controls.

CBS ArcSafe, Inc.

www.CBSArcSafe.com Denton, Texas - Ph: 877-4-SAFETY Remote racking systems, remote switch actuators, and handheld motorized racking tools for low- and medium-voltage switchgear.

CBS Nuclear Services, Inc.

www.CBSNuclear.com Matthews, N.C. - Ph: 704-882-1875 Specializes in shop and on-site field servicing of Class 1E safety-related low- and medium-voltage switchgear and circuit breakers. Also services industrial and nonnuclear-related circuit breakers and related switchgear and substations.

CBS Power Products, Inc.

www.CBSPowerProducts.com Dallas, Texas – Ph: 940-665-4444 New alternative utility and industrial power products: transformers, switchgear, and other power apparatus.

Circuit Breaker Sales Co., Inc.

www.circuitbreaker.com Gainesville, Texas – Ph: 800-232-5809 World's largest inventory of low- and medium-voltage circuit breakers. Millions of parts in stock. Complete service, remanufacture, upgrade, and life extension services. Match existing switchgear lineup.

Circuit Breaker Sales & Repair, Inc.

www.CBSalesAndRepair.com Houston, Texas – Ph: 281-479-4555 Servicing the Gulf Coast with shop or field service, repair, upgrade, or replacement of power system apparatus.

Circuit Breaker Sales & Service, Inc.

www.cbs-florida.com Lakeland, Fla. – Ph: 863-646-5099 One-stop service for circuit breakers, switchgear, transformers, protective relays, loadbreak switches, motor controls, unit substations, renewal parts, and repair, upgrade, life extension, and maintenance services.

Circuit Breaker Store, Inc.

www.CircuitBreakerStore.com Denton, Texas – Ph: 855-227-8673 Your online source for all Group CBS products, a powerful solutions provider with a specialty vendor network that can supply factory new, surplus new, and reconditioned circuit breakers, electrical distribution, control equipment, parts, and remote racking equipment.

Reliable Electrical Testing Services, LLC

www.ReliableElectricalTestingServices.com La Porte, Texas – Ph: 713-254-0006 On-site commissioning and acceptance testing of new installations and apparatus; or maintenance, troubleshooting, repair, and electrical testing of existing systems. Also professional electrical power engineering services to ensure the reliable, safe operation of electrical systems.



A Group CBS Company 2616 Sirius Road | Denton, TX 76208 | Ph: 877-4-SAFETY | Fx: 940-382-9435 | info@CBSArcSafe.com

CBSArcSafe.com

McGraw-Edison Merlin Gerin

Mitsubishi

Reyrolle

- Powell

Siemens Siemens-Allis

Square D

Toshiba

Westinghouse

Sentinel Power Services, Inc.

www.SentinelPowerServices.com Tulsa, Okla. – Ph: 800-831-9550 Sentinel Power Services is an electrical power service company servicing the Central U.S with electrical engineering studies; on-site electrical testing, preventive maintenance and repair services; and repairing, building, and installing electrical power systems.

Solid State Exchange & Repair, Inc.

www.SolidStateRepair.com Denton, Texas – Ph: 877-874-7349 Quality, reliabile, on-time service and support for all brands and types of solid state power electronics including circuit breaker trip devices, protective relays, motor overload relays, and rating plugs.

Transformer Sales Co.

www.TransformerSales.com Gainesville, Texas - Ph: 940-665-4484 Offers a complete line of new, surplus, and reconditioned dry type, cast coil, and liquid-filled power transformers from 1000 to 5000 kVA with primary voltages from 2400 volts to 34.5kV

Vacuum Interrupters, Inc.

www.VacuumInterruptersInc.com Carrollton, Texas – Ph: 214-442-5877 Provides replacement vacuum interrupters (vacuum bottle interrupters) for virtually any manufacturer's medium-voltage circuit breaker or contactor.

Western Electrical Services, Inc.

www.WesternElectricalServices.com Phoenix, Ariz. – Ph: 888-395-2021 Serving the Southwest with superior guality on-site electrical testing, maintenance, and repair services as well as rebuild, upgrade, and life extension services for switchgear, circuit breakers, and motor control.

Western Electrical Services, Inc.

www.WesternElectricalServices.com Salt Lake City, Utah – Ph: 888-395-2021 The only full-service electrical testing and maintenance company in the Intermountain region.

Western Electrical Services, Inc.

www.WesternElectricalServices.com Sumner, Wash. – Ph: 888-395-2021 The Northwest leader in electrical testing, maintenance, and power switchgear services providing on-site electrical testing and maintenance, electrical engineering studies, and sales, repair, upgrade, and life extension services of circuit breakers, switchgear, motor control, and transformers. Also custom manufacturing of engineered and reverse-engineered parts.

Western Electrical Services, Inc.

www.WesternElectricalServices.com Vancouver, Wash. – Ph: 888-395-2021 Utility class service provider to the Northwest T&D market.

CBS CBS CBS

A Group CBS Company



WE DO. DANGER?

CBSArcSafe.com (877) **4-SAFETY** (877)472-3389

CBS Arc Safe[®]

A Group CBS Company

AS A GROUP CBS COMPANY, CBS ArcSafe^o, Inc. provides you access to the industry's largest inventory of low- and medium-voltage switchgear remote systems for racking and operations. We have parts, on-site service, and comprehensive shop repair, remanufacturing, and life-extension capabilities. CBS ArcSafe[®] products keep technicians well outside the arc-flash danger zone.

We take pride in being available and capable of responding anytime, anywhere.

- Group CBS members are located across the U.S.
- Largest inventory of new, surplus, and reconditioned low- and medium-voltage power equipment and replacement parts available in North America
- Servicing of Class 1E nuclear-rated switchgear and circuit breakers (in compliance with 10CFR50 Appendix B)
- Modern shop facilities with skilled engineers and technicians
- Comprehensive quality repair, rebuild, retrofit, retrofill, and life-extension capabilities
- On-site scheduled or emergency field service
- We rent most equipment in our vast inventory
- Quick access to charter aircraft and hot-shot trucks for emergency requirements

CBS ArcSafe[®], Inc.'s personnel are available to assist you at all times. For after-hours or emergency support, contact us 24/7 via our emergency phone number: (940) 736-0943.

Assistance is also available from other Group CBS companies, which are listed on the back cover. We continue to develop new solutions for our customers on a daily basis. If you do not see what you need in our catalog, give us a call.

CBS ArcSafe Facilities

Based in Denton, Texas, CBS ArcSafe's facilities comprise three buildings, including administrative and design offices, a warehouse and manufacturing plant, and our new CBS ArcSafe Institute for customer training.

When visitors first arrive at CBS ArcSafe, they enter the 13,000-square-foot administrative, sales, research and development, and engineering offices. This location includes custom milling machines for R&D projects and custom single-use remote switching and handheld racking solutions designed to specific customer requirements, as well as cutting-edge computing, CAD design, and 3D printing additive manufacturing systems

Behind our administrative offices is a 9,500-square-foot warehouse comprising large-scale manufacturing, millwork, and testing equipment. All CBS ArcSafe products are produced 100% in the United States, ensuring the highest quality components and systems.





CBS ArcSafe Institute

Inside the newly constructed 11,000-square-foot CBS ArcSafe Institute, our technical staff will guide end users through the key features of their remote racking, switching, and operating equipment, including proper ways to maintain and store the equipment, as well as how to safely and most efficiently use the equipment with their switchgear.

The hands-on training is not a "one-size-fits-all" approach; rather, it is tailored to each facility's individual needs and requirements. This is a unique benefit to CBS ArcSafe customers made possible through our affiliation with Group CBS, which includes several electrical equipment suppliers and more than one million square feet of electrical inventory, including one of most extensive inventories of circuit breakers, switchgear, panel boards, and motor control centers in the U.S.

At the conclusion of the training, end users are equipped with all the information needed to properly utilize their switchgear remotely from a distance and in the safest, most effective manner that exists today



Remote Racking System For Rotary Circuit Breakers



By permitting the automatic racking of the circuit breaker from a remote location, the CBS ArcSafe® remote racking system replaces the manual racking operation and removes the operating personnel from manual contact with the circuit breaker. The unique design of the CBS ArcSafe remote racking system, with its specially manufactured drive shafts and tooling, enables the system to operate with all types of circuit breakers produced by the major switchgear manufacturers. The CBS ArcSafe remote racking system can operate with draw-out types of air, SF6, oil, and vacuum circuit breakers that have either a horizontal or vertical racking operation.

BENEFITS

Remote operation places operator outside the arc-flash protection boundary

Compatible with low- and medium-voltage

manufacturers Use with horizontal and vertical types of air, SF6, oil, and vacuum circuit breakers

circuit breakers produced by all major switchgear

- Height and angle of the drive is easily adjusted
- Quick-release drive shafts and couplings simplify setup
- Redundant over-racking protection provided
- Seamless transfer AC/DC power
- Hand-truck design provides easy mobility

SPECIFICATIONS

WEIGHT 200 lbs
BATTERY LIFE > 50 Operations*
SYSTEM VOLTAGE 24V DC
INPUT VOLTAGE \dots 120±10% VAC, 47-63 Hz ⁺
MAXIMUM AC CURRENT 12.2 A
DRIVE MOTOR POWER 250 W
DRIVE ASSEMBLY SPEED 80 RPM
CHARGE TIME Approx. 6 hours
DIMENSIONS 74" H x 26" W x 38.1" D
OPERATING DISTANCE 35 feet [‡]

Number of operations is dependent on the nature of the operation [†]May be custom ordered to match different local power standards *Standard configuration, contact CBS ArcSafe® for other options US PATENT NO. 8.151.452B2

Remote Racking System For Extraction-Style Circuit Breakers

RRS[®]-2



RRS®-1LT Lightweight Remote Racking System For Rotary Circuit Breakers

The RRS-1 LT system is CBS ArcSafe's lightweight

and compact counterpart to the industry-leading

RRS-1 universal rotary remote racking system. The

RRS-1 LT is designed specifically for applications

and environments where a weight and/or size

constraint may limit the use of the RRS-1. In order

to meet the design requirements for the RRS-1 LT,

CBS ArcSafe had to make major alterations to

the unit in order to minimize the size and weight,

therefore decreasing the rating of the unit. CBS

ArcSafe recommends the RRS-1 LT be primarily

used on low-voltage circuit breakers requiring no

WEIGHT . . . 135 lbs

BATTERY LIFE ... > 50 Operations*

CHARGE TIME . . . Approx. 4 hours

DIMENSIONS . . . 60" H x 22" W x 27" D

INPUT VOLTAGE . . . 120±10% VAC, 47-63 Hz⁺

more than 20 ft-lb of racking torgue.

SYSTEM VOLTAGE ... 24V DC

ERMISSABLE TORQUE . . . 20 ft-lb

DRIVE MOTOR POWER ... 200 W

DRIVE ASSEMBLY SPEED. . . 60 RPM

OPERATING DISTANCE . . . 300 feet[‡]

SPECIFICATIONS



BENEFITS

- Ideal for applications where users must transport racking unit by themselves through tight spaces or up stairways
- Utilizes same dual-redundant racking protection via the Current Control Module (CCM) and mechanical torque limiter, giving users two means of protection against damaging equipment during racking operations
- Welded steel frame of the RRS-1 has been replaced with a lightweight, extruded aluminum frame that supports customization based on specific application requirements
- Complete RRS-1 unit has been broken down into three modular systems on the RRS-1 LT to reduce the overall size and weight
- Large drive motor has been upgraded to a compact, brushless, DC gear motor assembly
- Height adjustment rail on the RRS-1 has been replaced with a lightweight, manually operated, guick-release slide assembly
- Control cabinet housing all electronics vital for operation has been integrated into a separate rugged case for simple transportation and storage
- Large rubber wheels have been upgraded with a smaller and lighter replacemen
- Intelligent AC/DC power system, allowing the unit to run on battery or AC power
- Two-station high-reach vertical adjustment capable of reaching breaker racking mechanisms up to 80" high. Also included is a wireless remote control which allows users to operate the unit from up to 300 feet away



Remote Racking System For Motor Control Center Buckets Only **RRS°-2 BE**

The RRS-2 BE is designed specifically for motor BENEFITS control center (MCC) bucket removal applications Setup and operation of the RRS-2 BE are very similar to that of the where users normally would be required to standard RRS-2; allowing users who are familiar with RRS-2 operation perform the install or remove operation manually to be able to transition between operation of the two easily with no - exposing them to the potential hazards of an arc additional training required. RRS-2 BE benefits include: flash and its lethal consequences. Designed to be extremely versatile, the RRS-2 BE is suited for use Control cabinet housing all of the electronics vital for operation for all environments — from grueling applications has been integrated into a separate rugged case for simple in a power-generation facility to clean rooms at a transportation and storage high-tech manufacturing plant.

SPECIFICATIONS

WEIGHT 105 lbs
BATTERY LIFE > 50 Opera
SYSTEM VOLTAGE 24V DC
INPUT VOLTAGE 120±10% V
CHARGE TIME Approx. 4 h
DIMENSIONS 74" H x 25"
ERATING DISTANCE 300 feet [‡]

*Number of operations is dependent on the nature of the operation *May be custom ordered to match different local power standards *Radio remote control standard on RRS-2 BE

Optional Equipment For Extraction-Style and Rotary-Type Circuit Breakers

The CBS ArcSafe RRS-2 is a portable and highly configurable remote racking system built to rack all circuit breakers with non-rotary racking mechanisms while keeping the operator outside of the arc-flash boundary. The operator is able to manipulate the breaker-specific tooling, available for numerous makes and models of switchgear, via either a wired or wireless pendant station from up to 300 feet away. The RRS-2 is powered by a redundant AC/DC system that utilizes either standard AC power or the internal battery to run the unit. Absolutely no modifications to the switchgear or circuit breaker are necessary to perform remote racking with the RRS-2. Prior to ordering, CBS ArcSafe recommends an on-site evaluation be performed by a company representative in order to ensure the proper equipment may be provided for each customer based on their particular switchgear and specific requests.

SPECIFICATIONS

WEIGHT . 160 lbs BATTERY LIFE > 50 Operations*

SYSTEM VOLTAGE 24V DC **INPUT VOLTAGE** 120±10% VAC, 47-63 Hz⁺ MAXIMUM AC CURRENT 12.2 A EXT. ACTUATOR FORCE 600 lb

EXT. ACTUATOR SPEED 1.0"/second

CHARGE TIME Approx. 6 hours

DIMENSIONS 60" H x 26" W x 36" D

OPERATING DISTANCE..... 35 feet[‡]

"Number of operations is dependent on the nature of the operation *May be custom ordered to match different local power standard Standard configuration, contact CBS ArcSafe® for other options

ations*

VAC, 47-63 Hz⁺ nours 5" W x 32" D

- Large linear actuator has been replaced with a compact, adjustable travel linear actuator more suited to the forces required for MCC buckets instead of large breakers
- Steel frame of the RRS-2 has been modified to accept the specialized tooling required for MCC bucket install and remove applications
- Modular construction reduces weight compared to RRS-2 model
- Dual-channel-enabled operation allows users to carefully control the MCC bucket install and remove operations
- Intelligent AC/DC power system, allowing the unit to run on battery or AC power
- Two-station high-reach vertical adjustment capable of reaching MCC buckets up to 80-inches high. Also included is a wireless remote control, allowing users to operate the unit from up to 300 feet away

CCM Radio Remote

ing effect and reduce

ing transport. Ideal for

customer applications

where transportation

The wireless/wired

video system allows

users to monitor the

remote racking oper-

300 feet away using

ation from up to

an RRS-mounted

alone monitor.

camera and stand-

wear on the RRS unit dur-

surfaces is likely to occur.

or use on uneven, rocky, or gravel

The CCM radio remote option allows users to operate the RRS and monitor the racking status wirelessly from up to 300 feet away. Ideal for users with extended distance

requirements or those who wish to monitor the status of the racking operation remotely.

Stair Climber Rails

The stair climber rails provide a low-friction surface for use when transporting the RRS up and down stairs and provide a level of protection to the control cabinet during everyday use. Ideal for applications requiring transportation up or down stairways.



LED Light The LED light accessory adds a forward-facing, highintensity light source with



to the front of the RRS. Ideal for personnel setting up the RRS or installing RRS tooling in lowlight environments.

Pneumatic Tires The air-filled pneumatic tires provide a cushion-



The wired pendant extension(s) allows users to operate the RRS from extended distances while remaining tethered to the unit. Ideal for use in facilities with extended distance requirements that also restrict radio-controlled device transmission.

Wired Pendant Extensions

Water-Resistant Cover

It is recommended that the RRS be stored in a dry, temperature-controlled environment. However, because this is not always possible, CBS ArcSafe offers a water-resistant cover that protects the RRS from contact with small amounts of liquid from above



Power Slide

The power slide system utilizes a motor to raise and lower the drive assembly instead of the standard handle. Ideal for applications requiring users to quickly and easily switch between racking heights for different breakers.

Magne-Blast Supervisory Link

The MBSL option allows the RRS to interface with the pre-existing control circuit and cubicle-mounted limit switches within GE Magne-Blast gear. Ideal for users who want to control the RRS by utilizing the pre-existing Magne-Blast control scheme.

Ideal for users who will be visually separated

from the RRS during the remote operation.

Tether System

The tether kit is used to provide a universal link between the RRS and the electrical equipment bein remotely racked. Ideal for users who wish to remotely rack breakers with moving racking mechanisms.





Front Casters The front casters allow for maximum mobility even in the tightest spaces, sim plifying installation and setup in these locations Ideal for tight or constrained areas where users may otherwise have difficulty maneuvering the RRS.

Low-Speed/Jog

The low-speed/jog option consists of a high-torque/ low-speed gearbox, as well as manual jog control for the RRS operation. Ideal for applications requiring added torgue output and/or more precise control.



High Lift

The high lift option is required to remotely rack any equipment with a racking mechanism more than 66 inches off the ground. Ideal for users who wish to rack breakers with extremely high racking mechanisms that would otherwise cause issues during manual operation









RRS[®]-3 Single-Use Portable Remote Racking Systems

CBS ArcSafe Single-Use Remote Racking Systems (RRS-3s) are designed to remotely rack a single style of circuit breaker utilizing a portable, stand-alone device. The RRS-3 units are most commonly assisted by strong magnets, meaning that no modifications are required to the switchgear. This also allows operators to easily move the RRS-3 from one breaker to another.

The RRS-3 system is an inexpensive single-application remote racking system that allows the operator to install and remove a breaker while standing 25 to 75 feet away with a hand-control unit. Each **CBS ArcSafe** RRS-3 is custom built to your electrical equipment so that it can safely operate your switchgear.

RRS-3 MDS







BENEFITS

- Lightweight, portable construction
- Mechanical and electrical safety protection
- Mechanical clutch over-racking protection
- Adjustable to fit unique equipment configurations
- Fast and easy to set up
- Reduced need for a full-body arc-flash suit
- Adds safety and helps comply with NFPA 70E
- No modifications required

OPTIONAL FEATURES

- 25-foot pendant extensions
- 24V DC LED light
- Wireless video camera system with LCD monitor
- Rugged protective case assembly



Radio Remote Pendant Station

MAX. OPER. DISTANCE 300 Ft. (Line Of Sight)
FREQUENCY Direct Sequence Spread Spectrum (DSSS) Technology
OPERATING TEMP. 4°F to 131°F
TRANSMITTER POWER +3.6V to +4.5V (Three AAA Batteries)
AUTO SHUTDOWN 4 Minutes
INDICATORS Green — Transmit Red — Receive Amber — Link
LOW BATTERY WARNING 3.3V and Below (Green LED will blink approx. once per second regardless of operational status)
LOW BATTERY SHUTDOWN. 3.1V and Below
TRANSMITTER WEIGHT 7.2 Oz.
TRANSMITTER SIZE 5.37" x 2.68" x 0.92"

TRANSMIT BUTTON LIFE ... 5 Million Operations

NOTE: All manufacturers' names, trademarks, and part numbers are used for reference purposes only. CBS ArcSafe, Inc. is not an authorized distributor or representative of manufacturers shown. Designated trademarks, brand names, and brands appearing herein are the property of their respective owners.

RSO-IV for the RRS-3 All RRS-3s require the RSO-IV to operate.

The RSO-IV is a rechargeable 24V DC power supply that, when used in conjunction with an appropriate RRS-3, will remotely perform any racking operation that would normally require local operation by trained personnel. Tasks the RSO and RRS-3s can perform include, but are not limited to, the following operations:

- 1. Installing and removing any switchgear utilizing a rotary racking mechanism
- 2. Installing and removing any switchgear utilizing a non-rotary racking mechanism
- 3. Engaging or disengaging mechanical or electrical interlocks, such as circuit breaker interlock foot-pedals or buttons

WEIGHT 23 lbs

BATTERY LIFE 8 amp-hours

OUTPUT VOLTAGE..... 24V DC

INPUT VOLTAGE 100-240 VAC/ 50-60Hz

FULL LOAD AMPS 2 A

ENCLOSURE RATING Type 1

ENCLOSURE MATERIAL Polypropylene copolyme

NOTE: Some units will require the RSO-IV-NW; the RSO-IV-NW is an extension of the RSO-IV that allows the operator to operate interlock

RSO-IV PATENT PENDING

All CBS ArcSafe products are compatible with all switchgear manufacturers including:

- ABB
- Allis-Chalmers
- Alstom
- BBC
- Cutler-Hammer
- Eaton

- - Federal Pioneer
 - General Electric
 - Hvundai
 - ITE ITE

- McGraw-Edison Merlin Gerin
- Mitsubishi
- Powell
- Reyrolle

- Siemens
- Siemens-Allis
- Square D
- Toshiba
- Westing