



*Distance Is Safety®*

A Group CBS Company

## SecureConnect™ Remote Operator

for use with Allen-Bradley® CENTERLINE® 2100 Motor Control Centers  
equipped with SecureConnect Units



**Distance *is* Safety®**

WHAT STANDS  
BETWEEN YOU AND  
ARC-FLASH DANGER?

**WE  
DO.**

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Rev. 2/17/2017

Installation and Operation

# More Products by CBS ArcSafe®

## **RRS-1 – Universal Remote Racking System (Rotary)**

The CBS ArcSafe® RRS-1 is a universal remote racking system capable of remotely installing and removing rotary style draw out circuit breakers without requiring any modification to the existing switchgear. Operation of the simple to use RRS-1 is quite intuitive and requires only minimal setup. When used properly, the RRS-1 allows technicians to remain outside of the arc flash boundary during the potentially dangerous racking operation.

## **RRS-2 – Universal Remote Racking System (Non-Rotary)**

The CBS ArcSafe® RRS-2 is a universal remote racking system capable of remotely installing and removing non-rotary style draw out circuit breakers without requiring any modification to the existing switchgear. Operation of the simple to use RRS-2 is quite intuitive and requires only minimal setup. When used properly, the RRS-2 allows technicians to remain outside of the arc flash boundary during the potentially hazardous racking operation.

## **RRS-3 – Application Specific Remote Racking System (Rotary and Non-Rotary)**

The CBS ArcSafe® RRS-3 product line is made up of various application specific remote breaker racking devices. Each standalone system allows service personnel to remotely install and remove a particular type of circuit breaker safely while stationed safely outside of the arc flash boundary during the potentially dangerous operation. The lightweight and compact design of the RRS-3 systems makes them ideal for hard to access areas where space is at a premium.

## **RRS-4 – PLC Based Universal Remote Racking System (Rotary)**

The CBS ArcSafe® RRS-4 universal remote racking system is an updated PLC based version of the best selling RRS-1. The dual mode, source programmable, PLC based control system offers two different operating modes to choose from based on user preference or the application. The RRS-4 is capable of remotely installing and removing rotary style draw out circuit breakers without requiring any modification to the existing switchgear, allowing users to remain outside of the arc flash boundary during the potentially hazardous racking operation.

## **RSA – Remote Switch Actuator**

The CBS ArcSafe® Remote Switch Actuator (RSA) product line is made up of various application specific remote operating devices. These products allow service personnel to remotely perform all aspects of an operation for a particular type of electrical equipment from outside the arc flash boundary – reducing or eliminating the possibility of serious injury or death resulting from an arc flash.

## **RSO – Remote Switch Operator**

During a remote operation, the CBS ArcSafe® RSO functions as both the power supply and user interface for the device being remotely operated by the user. When paired with an applicable CBS ArcSafe® device, this portable standalone system allows service personnel to remotely perform a racking or switching procedure from outside the arc flash boundary – reducing or eliminating the possibility of injury or death resulting from an arc flash

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# About the User's Guide

This user's guide describes the functions and features of the CBS ArcSafe® remote operator for the Allen-Bradley CENTERLINE 2100 motor control center plug-in units equipped with SecureConnect™. This technical document is intended to act as a simplified reference for users of the equipment; allowing for quick and efficient use of the SecureConnect Remote Operator.

## **DANGER!**

This is a red hazard alert warning box; red hazard alert boxes contain information pointing out potential hazards to personnel and equipment.

## **ATTENTION!**

This is a green information box; green information boxes are used to place emphasis on valuable information the user will want to pay particular attention to.



## **DANGER!**

Ensure that personnel using this equipment are adequately trained in the operation of the motor control centers they are planning to work with; that they are correctly stationed outside the arc flash boundary; and that they comply with all applicable Federal, State, Local, and In-house safety regulations and procedures. Attention should be given to distance, angle, and personal protective equipment (PPE).

## **DANGER!**

Confirm that motor control centers are properly maintained and in good working order before using the Remote Operator on your motor control centers. Contact your local group CBS service provider at [www.gcbs.com](http://www.gcbs.com) to assist in proper care and maintenance for your equipment.

# 1 Equipment Description

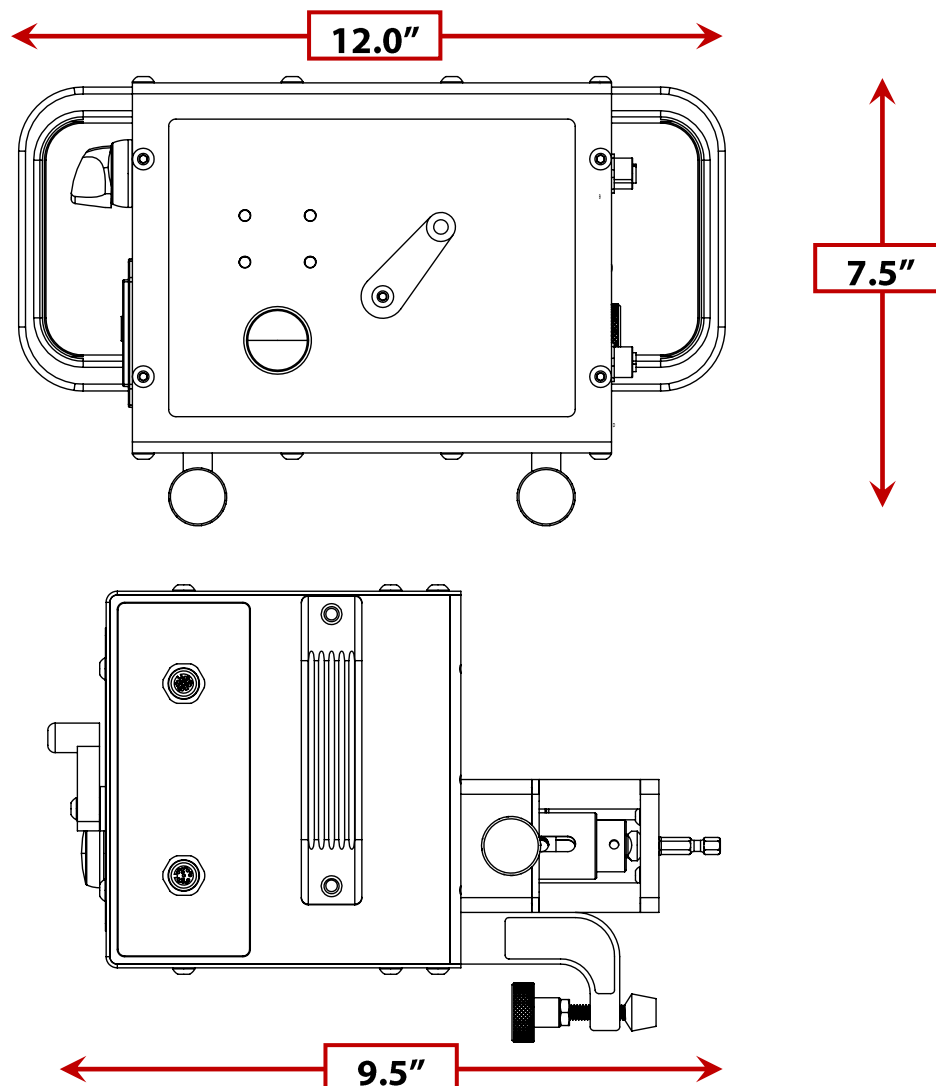
This section will describe in detail the available functionality of the SecureConnect™ Remote Operator, as well as list and describe the basic features of the unit. These features will be discussed at length in the following sections of this manual.

## 1.1 Scope of Operations

The CBS ArcSafe® SecureConnect Remote Operator system enables service personnel to stand outside the arc flash protection boundary while operating electrical equipment; potentially reducing or eliminating the need for a full-body arc flash hazard suit (depending on Federal, State, Local, and In-house safety regulations and procedures). The SecureConnect Remote Operator has an AC powered 120-240 VAC power supply that will remotely rack Allen-Bradley® CENTERLINE® 2100 Motor Control Center units equipped with the SecureConnect mechanism.

## 1.2 Dimensions

The following figure shows the physical exterior dimensions of the SecureConnect Remote Operator. Dimensions are in inches.



## 1.3 SecureConnect™ Remote Operator Specifications

The following tables contain the relevant specifications relating to the technical and operational aspects of the SecureConnect Remote Operator.

### SecureConnect Remote Operator Technical Specifications

|                           |     |  |
|---------------------------|-----|--|
| <b>Weight</b>             | ... | 12 lb (+1 lb with Radio Remote Option) |
| <b>Input Voltage</b>      | ... | 100-120 / 200-240VAC, 50-60Hz          |
| <b>Main Fuse</b>          | ... | 250VAC, 2.5A (GDB or GSB)              |
| <b>Peak Power Draw</b>    | ... | 32W                                    |
| <b>Enclosure Material</b> | ... | Aluminum                               |
| <b>Operational Life</b>   | ... | 12,000 Operations                      |

## 1.4 Radio Remote Specifications (Optional)

The following table contains the relevant specifications relating to the optional radio remote pendant station.

### Radio Remote Technical Specifications

|                                |     |  |
|--------------------------------|-----|--|
| <b>Max Operating Distance</b>  | ... | 300 Ft. (Line Of Sight)  |
| <b>Frequency</b>               | ... | 2.4 GHz  |
| <b>Modulation</b>              | ... | Direct Sequence Spread Spectrum (DSSS) Technology  |
| <b>Operating Temperature</b>   | ... | -4°F to 131°F  |
| <b>Transmitter Power</b>       | ... | +3.6V to +4.5V (Three AAA Batteries)   |
| <b>Auto Shutdown</b>           | ... | 4 Minutes  |
| <b>Indicators</b>              | ... | TX – Transmit RF Data<br>RX – Receive RF Data<br>STD – Stab Assembly Disconnected<br>STC – Stab Assembly Connected<br>SHC – Shutter Assembly Closed<br>SHO – Shutter Assembly Open |
| <b>Low Battery Warning</b>     | ... | 3.3V and below (Red STC LED will blink approximately once per second when the Stab Assembly is Disconnected, and rapidly with TX/RX when the Stab Assembly is Connected)           |
| <b>Low Battery Shutdown</b>    | ... | 3.1V and below   |
| <b>Transmitter Weight</b>      | ... | 7.2 Oz   |
| <b>Transmitter Size</b>        | ... | 5.37" x 2.68" x 0.92"  |
| <b>Transmitter Button Life</b> | ... | 5,000,000 Operations   |

## 2 Remote Operator Installation

### **DANGER!**

Confirm that the equipment to be remotely operated matches the equipment shown and described on the cover page. If the equipment does not match, please contact CBS ArcSafe® for more information regarding remote operating applications for the equipment in question.

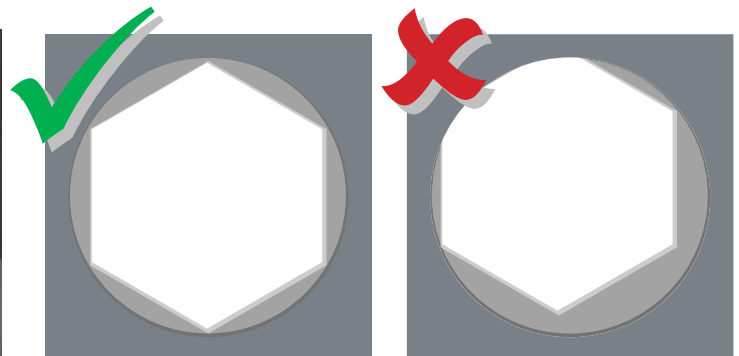
### **ATTENTION!**

The location of certain items such as mimic bus, stickers, and/or placards may interfere with the installation of the remote operating equipment. These items may need to be removed or repositioned for proper installation.

1. Ensure that the plug-in unit to be operated, as well as the plug-in unit or wireway cover below, is free from any obstruction that may interfere with the proper installation of the SecureConnect™ Remote Operator.



2. Confirm that the plug-in unit handle operator is turned OFF according to manufacturer specifications.
3. Slide the access cover for SecureConnect racking operator to the open position. Press and hold the handle for the CENTERLINE® 2100 in full depressed OFF position to open the safety window for the SecureConnect racking operator and confirm that the SecureConnect racking operator is fully visible in the access hole in the door. If it is not fully visible, please refer to the troubleshooting section of this manual. Release the operating handle after confirmation is completed.

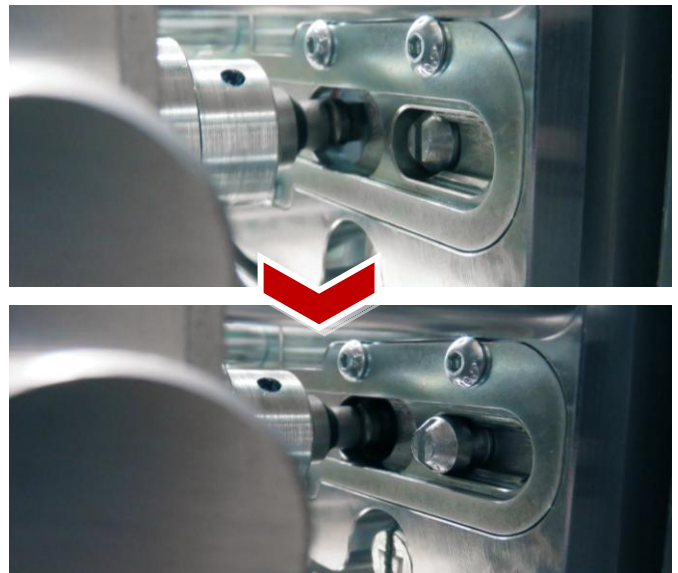




4. Rotate the knurled locking knob on the right side of the Remote Operator until it clicks and stops rotating, and then depress the  $\frac{1}{4}$ " tool head on Remote Operator until it locks in place. This will facilitate easier installation of the Remote Operator.



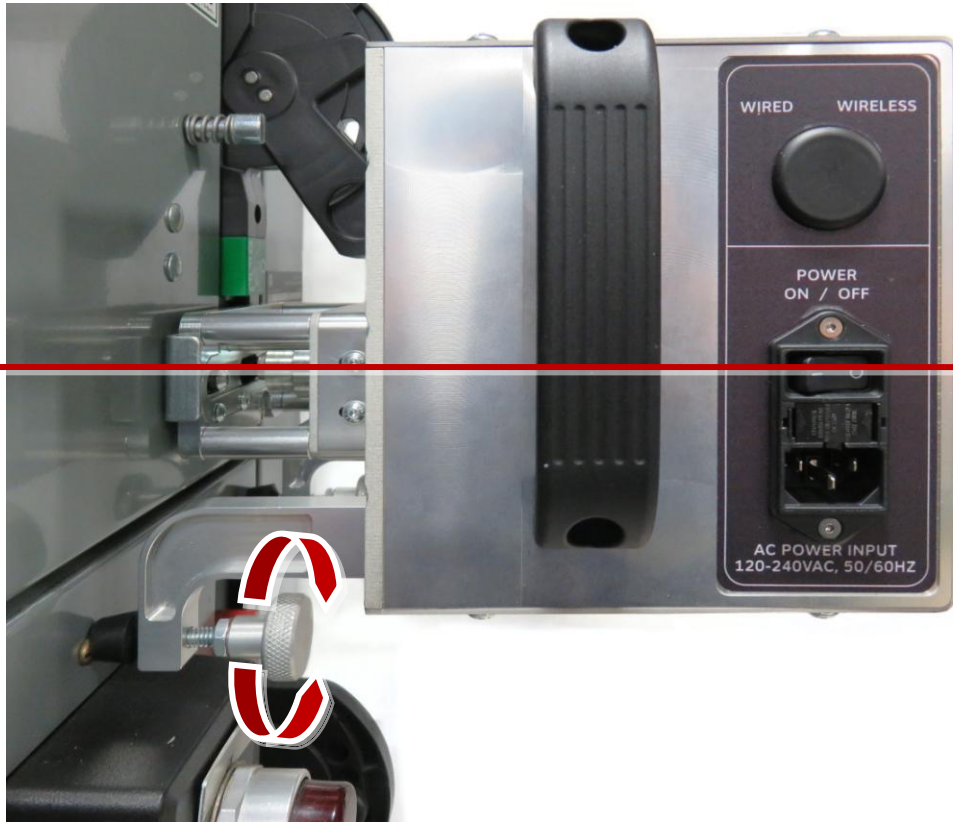
5. With the latch handle on the Remote Operator in the unlocked position, align the pins on the SecureConnect plug-in unit to the holes on the SecureConnect Remote Operator, and slide the Remote Operator onto the plug-in unit, over the pins.



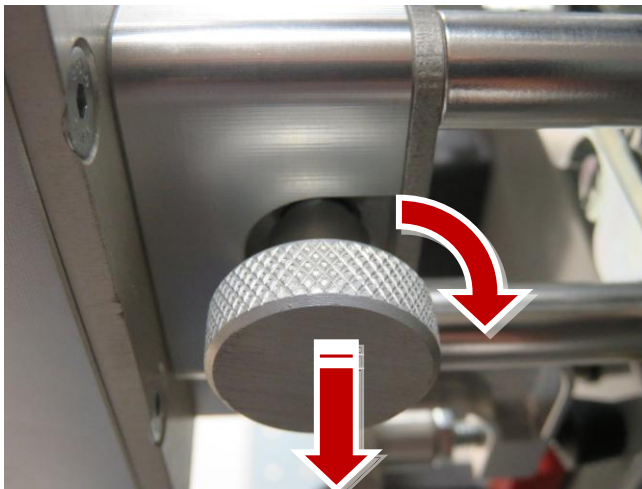
6. Rotate the latch handle on the back of the Remote Operator to the locked position to latch it in place.



7. Press and hold the handle operator for the CENTERLINE® 2100 unit to the fully depressed OFF position to open the safety window for the SecureConnect racking operator. If a lock-out/tag-out device is used, manipulate the lock-out/tag-out to install the Remote Operator.
8. Check that the Remote Operator is approximately level with respect to the plug-in unit. Tighten or loosen the adjustment knobs for the rubber support feet until the operator is approximately level.



9. Pull out and turn the knurled locking knob on the right-hand side of the Remote Operator and rotate it 90° to release the 1/4" tool head. Release the handle for the CENTERLINE 2100 unit.





10. Remove the cover from the SecureConnect Test Port on the CENTERLINE® 2100 motor control center, and then connect the 4-pin connector cable between the target unit to be operated and the Remote Operator.

### **DANGER!**

Confirm that the 4-pin connector cable between the cabinet and Remote Operator is firmly seated to both the target unit to be operated and the SecureConnect Remote Operator.

Failure to do so may result in incorrect operation of the Remote Operator and/or damage to the SecureConnect plug-in unit.

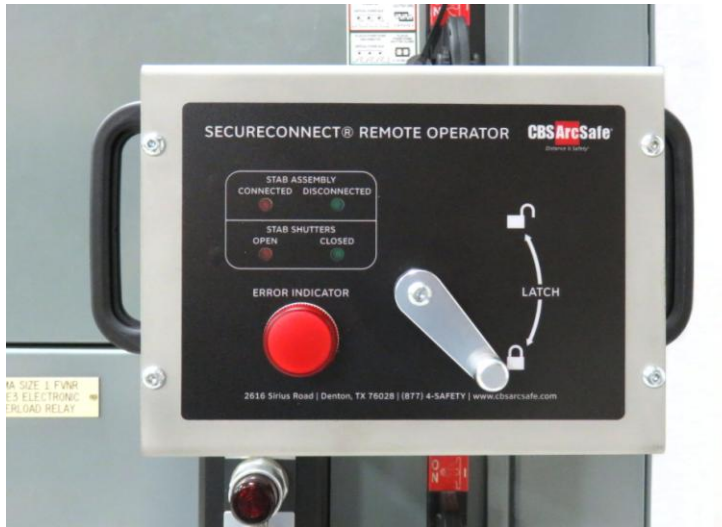
11. Connect the 8-pin connector cable between the Remote Operator and the wired pendant.
  - a. If wireless operation is desired on units equipped with the wireless remote option, instead of connecting the wired pendant to the remote operator, rotate the selector switch on the Remote Operator to the WIRELESS position.
12. Connect the power cable to an available 100-120 / 200-240VAC, 50-60Hz power source.

The SecureConnect Remote Operator is now ready for operation.



### 3 Remote Operator Removal

1. Ensure that the SecureConnect™ Remote Operator is powered off.
2. Disconnect the power cable, 8-pin cable (for wired operation), and the 4-pin cable from the Remote Operator, Pendant, and plug-in unit.



3. Rotate the latch handle on the back of the Remote Operator 90° to the unlocked position to.

#### **DANGER!**

Unlatching the Remote Operator may cause it to fall. Secure the Remote Operator by the handles when unlatching.

4. Draw the Remote Operator directly back, and off of the plug-in unit.
5. Slide the SecureConnect cover back to closed position.



Removal of the SecureConnect Remote Operator is now complete.

## 4 Operation

### ATTENTION!

Please confirm that all cables are clear of moving parts. Failure to do so may result in damage to cables and/or actuator.

### DANGER!

If an error occurs during operation, the “ERROR INDICATOR” pilot on the Remote Operator will illuminate and/or flash. Ensure that all errors are properly diagnosed before operation to prevent damage to the Remote Operator or SecureConnect™ motor control center.

### 4.1 Wired Pendant

1. Turn the power switch on the SecureConnect™ Remote Operator to the ON position.
2. If the Remote Operator is equipped with a wireless operation option, confirm that the selector switch on the Remote Operator is set to the WIRED position.
3. Exit the arc flash boundary with the wired pendant.
4. The LED Indicators on the pendant will illuminate to show the current status of the SecureConnect stabs and shutters.
5. To connect the power stabs of the plug-in unit, press the CONNECT pushbutton.
  - a. If the status of the shutters and stabs indicate an improper state, the pushbutton will not illuminate and it will not perform any operation.
  - b. If necessary, the Remote Operator will auto-seat the operating tool, and will then connect the plug-in unit.
6. To disconnect the power stabs of the plug-in unit, press the DISCONNECT pushbutton.
  - a. If the status of the shutters and stabs indicate an improper state, the pushbutton will not illuminate and it will not perform any operation.
  - b. If necessary, the Remote Operator will auto-seat the operating tool, and will then disconnect the plug-in unit.
7. After operation, confirm that the shutters and stabs are indicated to be in the correct position based on the operation performed.
8. After operation is complete and confirmed, turn the power switch on the SecureConnect™ Remote Operator to the OFF position and then remove the Remote Operator.



### DANGER!

If a critical error occurs during operation, press REMOTE OPERATOR STOP to instantly stop operations.

## 4.2 Wireless Pendant

1. Turn the power switch on the SecureConnect™ Remote Operator to the ON position.
2. If the Remote Operator is equipped with a wireless operation option, ensure that the selector switch on the Remote Operator is set to the WIRELESS position.
3. Exit the arc flash boundary with the wireless pendant.
4. The LED Indicators on the pendant will illuminate to show the current status of the SecureConnect stabs and shutters, according to the key on the pendant.
5. To connect the power stabs of plug-in unit, press the CONNECT pushbutton.
  - a. If the status of the shutters and stabs indicate an inconsistent state in the CENTERLINE® 2100 motor control center, the pendant will not allow any operations to be performed.
  - b. If necessary, the Remote Operator will auto-seat the operating tool, and will then connect the plug-in unit.
6. To disconnect the power stabs of the plug-in unit, press the DISCONNECT pushbutton.
  - a. If the status of the shutters and stabs indicate an inconsistent state in the CENTERLINE 2100 motor control center, the pendant will not allow any operations to be performed.
  - b. If necessary, the Remote Operator will auto-seat the operating tool, and will then disconnect the plug-in unit.
7. After operation, confirm that the shutters and stabs are indicated to be in the correct position based on the operation performed.
8. After operation is complete and confirmed, turn the power switch on the SecureConnect™ Remote Operator to the OFF position and then remove the Remote Operator.



### **DANGER!**

If a critical error occurs during operation, press and release STOP to instantly stop operations.



## 5 Troubleshooting

| Issue  | Cause   | Solution   |
|--|---|--|
| The Remote Operator main power switch is in the ON position, but the Remote Operator won't power on. | Power Cord unplugged                                    | With the Remote Operator turned off, confirm that the power cord is securely connected at the power receptacle and Remote Operator.  |
|  | Main Power Fuse is blown                                | Replace with equivalent fuse, rated as specified in Section 1.3: SecureConnect™ Remote Operator Specifications   |
|  | Internal protection circuit has activated               | Contact CBS ArcSafe.   |
| The Error Indicator light on the Remote Operator is illuminated solid, or blinking                   | Continuous blinking – Tooling failed to seat            | Check that the tool lockout on the Remote Operator is disengaged (pulled out fully and turned). Remove the Remote Operator and then Install as described in Section 1.                                 |
|  |   | If problem persists, contact CBS ArcSafe.  |
|  | Two flash then pause – Operator over-travel             | Check the 4-pin cable from the Remote Operator to the SecureConnect plug-in unit and verify that it is fully seated.   |
|  |   | If problem persists, contact CBS ArcSafe.  |
|  | Three flash then pause – Switch state-change failure    | Check the 4-pin cable from the Remote Operator to the SecureConnect plug-in unit and verify that it is fully seated.   |
|  |   | If problem persists, contact CBS ArcSafe.  |
|  | Four flash then pause – Tool Position Sensor Fault      | If the tooling is not fully seated in the racking mechanism, remove and then reinstall the Remote Operator from the switchgear and re-attempt operation. If the problem persists, contact CBS ArcSafe. |
|  |   | If the tooling is fully seated, the tooling position sensor may be faulty. Contact CBS ArcSafe to have the operator repaired.  |
|  | Continuous Solid – Internal controller or driver error. | Power down the Remote Operator. Inspect for visible damage or signs of over-heating, and power back on.  |
|  |   | If error light persists, contact CBS ArcSafe.  |



| Issue   | Cause                                  | Solution  |
|---|--|---|
| SecureConnect Fails to operate (Connect or Disconnect) but no error light.  | Insufficient motor torque              | Contact CBS ArcSafe.  |
|   | Malfunctioning SecureConnect Mechanism | Contact CBS ArcSafe.  |
|   | Broken or damaged tool                 | Check that the operating tool on the Remote Operator is unbroken and free from damage.  |
|   |  | If damaged, Contact CBS ArcSafe for a replacement tool.   |
| Alignment issue when installing the Remote Operator on a SecureConnect unit |  | <p>Contact Rockwell Automation Technical Support at:</p> <p>Telephone: (440) 646-3434</p> <p>Web: <a href="http://www.rockwellautomation.com/global/support.americas/us.page">http://www.rockwellautomation.com/global/support.americas/us.page</a></p> |

## 5.1 Radio Remote Troubleshooting (for Radio Remote Option)

| Issue  | Cause  | Solution  |
|--|--|---|
| Remote Operator fails to respond to commands from Radio Remote | Remote Operator is in Wired Mode                     | Turn the selector switch on the side of the Remote Operator is set to WIRELESS.   |
|  | Radio Remote has lost pairing to the Remote Operator | Refer to Section 5.1.1: Radio Remote Pairing Procedure (for Radio Remote Option) to repair Radio Remote with the Remote Operator. |
|  |  | If problem persists, contact CBS ArcSafe.   |
| On Radio Remote, STC light blinks continuously                 | Low Battery  | Replace batteries and retry.  |

### 5.1.1 Radio Remote Pairing Procedure (for Radio Remote Option)

Occasionally, a situation may occur where the handheld digital radio remote transceiver may lose its communication link to the base unit transceiver located within the SecureConnect™ Remote Operator, causing the digital radio remote not to function properly. If this communication link is lost, the handheld transceiver will not operate the Remote Operator in any way. In this situation, users must perform the following procedure to re-establish this connection. Users are encouraged to contact CBS ArcSafe® when this occurs in order to talk with a trained professional regarding the issue in addition to performing the procedure.

Follow these steps to re-establish the communication link between the handheld transceiver and the base unit transceiver.

1. First, ensure that the remote that is malfunctioning belongs to the Remote Operator in question. If there are multiple CBS ArcSafe products equipped with the digital Radio Remote option in the area, check to ensure that the handheld transceivers have not been mismatched by checking the serial number printed on the remote to the serial number listed on the Remote Operator.
2. Also confirm that the selector switch on the side of the Remote Operator is set to WIRELESS.
3. Next, power off both the the Remote Operator and handheld transceiver, and then power on the handheld transceiver.
4. Next, with a clear and unobstructed line of sight path between the handheld transceiver and Remote Operator, simultaneously press and hold the upper left and upper right buttons (Disconnect and Connect) on the handheld transceiver. The RX and STD lights should illuminate and begin blinking. Continue to simultaneously hold both buttons until the TX and RX LEDs illuminate steadily.

#### ATTENTION!

Users only have approximately 2 seconds to complete step 6 after step 5 is performed. If step 6 is not performed within the two second interval, all LEDs will flash and the synchronization procedure is aborted. If this happens, restart from Step 4 to establish the communication link.

#### ATTENTION!

If users hold the two buttons down simultaneously too long the STD LED will stop flashing and remain lit solid. If this happens the user has held the two buttons for too long and the procedure must be restarted from Step 4.

5. Release the Disconnect and Connect command buttons. The STC and STD LEDs will light and begin blinking. The user has two seconds to perform the next step.
6. Within the two second window, press and hold the upper left button (Disconnect) on the handheld transceiver. All of the LED's should light up, and then TX should begin to blink steadily.
7. While continuing to hold the upper left button on the handheld transceiver, turn on the Remote Operator. Confirm that the selector switch on the side of the Remote Operator is set to WIRELESS.
8. At this point the handheld transceiver and base unit will begin to establish a communication link while the upper left button is being held. Once the process is complete all LED's should light briefly then go out.

9. After the LEDs have performed as stated in the previous step, the upper left button may be released, upon which time the TX LED will begin to flash, indicating that the link is complete and the unit is now transmitting data.
10. If everything was done properly, the Remote Operator should now be ready to operate using the handheld digital Radio Remote. If the Remote Operator still does not respond to commands from the Radio Remote, contact CBS ArcSafe.





# Notes

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## SecureConnect™ Remote Operator Installation and Operation

for use with Allen-Bradley® CENTERLINE® 2100 Motor  
Control Centers equipped with SecureConnect Units

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### **DANGER!**

Ensure that personnel using this equipment are adequately trained in the operation of the motor control center they are planning to work with; that they are correctly stationed outside the arc flash boundary; and that they comply with all applicable Federal, State, Local, and In-house safety regulations and procedures. Attention should be given to distance, angle, and personal protective equipment (PPE).