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Selection & Application Guide

# WL locking provisions

## WL low voltage circuit breakers

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# WL locking provisions



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# Locking provisions (Overview)



## Padlock Provisions

- P1** OPEN (Trip-Free) (see page 4)
- P2** Racking Handle (see page 4)
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- K1** OPEN (Trip-Free) (see page 6)
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## Padlock Provisions

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## Keylock Provisions

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- M3** Closed Door Racking (see page 9)
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# Locking provisions application guide for WL low voltage power circuit breakers

## Introduction

One of the cornerstones of electrical safety in the workplace is understanding and minimizing (if not completely eliminating) the exposure to potentially hazardous conditions. Therefore, it is highly recommended that electrical equipment owners perform an adequate risk assessment.

In many situations, the risk assessment is a mandatory requirement of insurance agencies and regulatory bodies to obtain and maintain certificates of occupancy. There are many national, regional, and local requirements regarding the necessity of risk assessment and mitigation procedures. One such standard is NFPA 70E, Standard for Electrical Safety in the Workplace, which guides owners through creating electrically-safe workspaces in compliance with OSHA 1910 Subpart S for electrical safety.

As a result of that risk assessment, there will likely be recommendations to implement a variety of lockout and tagout procedures, in addition to other measures to isolate or limit access of unauthorized or untrained personnel to the hazardous locations.

Whatever your preferred lockout or interlocking solution may be, Siemens has the solution for you. The following discussion describes both standard and optional solutions available for the Siemens type WL family of low voltage power circuit breakers.

## Standard padlock provisions

The following padlock provisions are provided as standard on every WL low voltage power circuit breaker.

### Padlockable OPEN (Trip-Free)



Situated just above the electronic trip unit, every UL 1066 or UL 489 type WL low voltage power circuit breaker includes a provision for padlocking the circuit breaker in the OPEN position.

- This provision allows for the installation of one to four padlocks with a maximum shackle diameter of 0.25 in. (each).
- It is also possible to install a padlock expander unit on this provision, allowing simultaneous installation of even more padlocks.

Table 1: Replacement kit order number

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLLKNP

### Padlockable racking handle



One common methodology utilized in lock-out/tag-out procedures is to rack the drawout circuit breaker into the TEST position and padlock it in place. This prevents the circuit breaker from being racked in (connected), or withdrawn and replaced by another circuit breaker. Additionally, this practice allows for testing of control schemes while the circuit breakers are isolated from the primary circuit.

Each WL racking handle assembly (standard for all type WL drawout circuit breakers) includes an integrated padlock provision. With the racking handle stowed, padlocks coupled to the provision will prevent the onboard racking handle from being withdrawn - blocking the ability to rack the circuit breaker in or out of the circuit breaker compartment. The drawout circuit breaker may be padlocked in the DISCONNECT, TEST, or CONNECT positions.

- This provision allows for the installation of one to three padlocks with a maximum shackle diameter of 0.25 in. (each).
- It is also possible to install a padlock expander unit on this provision, allowing simultaneous installation of even more padlocks.

### Padlockable drawout rails



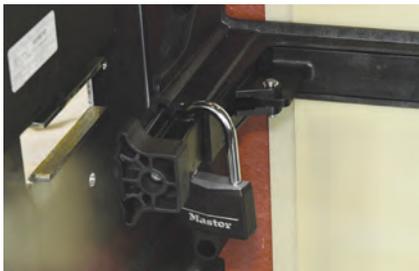
Both the left-hand and right-hand drawout circuit breaker cradle adapter include integral padlock provisions. With at least one padlock installed, the drawout rails are locked into place, preventing a circuit breaker from being inserted or withdrawn. The drawout rails may be padlocked in the DISCONNECT, TEST, or CONNECT positions.

- This provision allows for the installation of one to four padlocks (with a maximum of two padlocks per rail) with a maximum shackle diameter of 0.25 in. (each).
- It is also possible to install a padlock expander unit on this provision, allowing simultaneous installation of even more padlocks.
- When the door is closed, the padlocks will be behind the circuit breaker compartment door. If it is necessary to access to the padlocks when the door is closed, then utilizing the padlock hasp intergrated on the racking handle is an alternative solution.

### Optional padlock provisions

In addition to the standard padlock provisions, the following padlocking accessories are also available. These options may be ordered as part of a breaker configuration assembled at the factory or separately as field-installable accessories.

### Padlockable shutter



The UL 1066 and UL 489 families of drawout circuit breakers include an optional isolation shutter accessory. The isolation shutter functions to prevent incidental contact with the primary conductors while an operator is inspecting or performing maintenance with a type WL circuit breaker compartment. To provide an additional degree of protection, the isolation shutter may be padlocked to prevent the shutter from being opened manually by unauthorized personnel.

- This provision requires the installation at least one padlock to each shutter actuator arm, each with a maximum shackle diameter of 0.25 in, and a minimum throat length of 2 in.
- It is also possible to install a padlock expander unit on this provision, to facilitate even more padlocks being simultaneously installed.

### Padlock OPEN/CLOSE buttons



Each type WL circuit breaker includes manual CLOSE and OPEN buttons in the front escutcheon. When it is desirable to restrict access to these functions, padlockable flip covers may be added. With this kit, covers may be added to either one or both of the pushbutton controls. You choose. Note that this accessory only impedes access to the pushbutton controls. Other means may be used to close and open the circuit breaker - such as electrically operated accessories including shunt trip devices, undervoltage trip devices, and remote close coils.

- This provision allows for the installation of one to three padlocks (per button cover) with a maximum shackle diameter of 0.25 in. (each).
- It is also possible to install a padlock expander unit on this provision, allowing simultaneous installation of even more padlocks.
- Each accessory kit includes two padlockable flip covers, two finger guards, and two cheat-hole covers.

Table 2: Field Installable Kit Order Number

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLLKKT

### Padlockable charging handle



Each type WL circuit breaker includes a manual charging handle, integrated into the front escutcheon. This handle is used to charge the stored energy spring for closing the circuit breaker. For some applications, it may be desirable to restrict

access to this function. This can be accomplished by applying a padlock to the manual charging handle. Note that this accessory only impedes access to the manual charging handle. The stored energy closing spring may be charged by an optional spring charging motor. Presence of this spring charging motor should be noted on the accessory label, located on the bottom of the circuit breaker’s front cover.

- This provision only allows for the installation of one padlock, with a maximum shackle diameter of 0.25 in. (each).
- It is also possible to install a padlock expander unit on this provision, allowing simultaneous installation of even more padlocks.

**Table 3: Field installable kit order number**

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLHANDLC

### Optional keylock provisions

The following describes the available, optional keylock accessories for the WL low voltage power circuit breaker.

#### Keylock OPEN (Trip-Free)



Commonly utilized on fixed mounted main and tie circuit breakers in multiple source power distribution systems, this keylock is used to hold the circuit breaker in the OPEN position.

When installed, this key lock assembly resides just above the OPEN/CLOSE indicator. This provision may be used with key cylinders manufactured by Kirk and Yale (Superior).

- This provision allows for the installation of only one keylock cylinder. Multiple key cylinders are not possible.
- When ordered from the factory with a Kirk or Yale cylinder, a random keying pattern will be employed – even when ordering multiple circuit breakers. Specific key patterns, stampings, and “keyed alike” customizations are not possible from the factory. When specific keying requirements are necessary, the provision-only should be ordered from Siemens, and the customized key cylinders should be ordered directly from the lock manufacturer. Manufacturer order numbers for the key cylinder types are located in Table 10.
- When ordering the provision-only, it will ship uninstalled, with installation instructions. The provision cannot be installed without the key cylinder.

**Table 4: Field installable kit order number**

Description:	Catalog Number
Provision with KIRK™ Key (Frame Sizes 1, 2, & 3)	WLLKOFFKRK
Provision with Yale™ Key (Frame Sizes 1, 2, & 3)	WLLKOFFSUP
Provision-only for KIRK™ or Yale™ (Frame Sizes 1, 2, & 3)	WLLKOFFPR

#### Keylock racking handle



Another common methodology utilized in lock-out/tag-out procedures is to rack the drawout circuit breaker into the TEST position and keylock in place. This prevents the circuit breaker from being racked in (connected), or withdrawn and replaced by another circuit breaker. Additionally, this practice allows for testing of control schemes while the circuit breakers are isolated from the primary circuit.

When installed, this key lock assembly will prevent the onboard racking handle from being withdrawn, blocking the ability to rack the circuit breaker in or out of the circuit breaker compartment. The drawout circuit breaker may be key locked in the DISCONNECT, TEST, or CONNECT positions.

- This provision allows for the installation of only one keylock cylinder. Multiple key cylinders are not possible.
- When ordered from the factory with a Kirk or Yale cylinder, a random keying pattern will be employed – even when ordering multiple circuit breakers. Specific key patterns, stampings, and “keyed alike” customizations are not possible from the factory. When specific keying requirements are necessary, the provision-only should be ordered from Siemens, and the customized key cylinders should be ordered directly from the lock manufacturer. Manufacturer order numbers for the key cylinder types are located in Table 10.
- When ordering the provision-only, it will ship uninstalled with installation instructions. The provision cannot be installed without the key cylinder.

**Table 5: Order number**

Description:	Catalog Number
Provision with KIRK™ Key (Frame Size 1)	WLLKCLFRK1
Provision with Yale™ Key (Frame Size 1)	WLLKCLSUP1
Provision with KIRK™ Key (Frame Sizes 2 & 3)	WLLKCKRK
Provision with Yale™ Key (Frame Sizes 2 & 3)	WLLKCSUP
Provision-only for KIRK™ or Yale™ (Frame Sizes 2 & 3)	WLLKCKPR

**Keylock OPEN/CLOSE buttons**



Every WL circuit breaker includes manual CLOSE and OPEN buttons in the front escutcheon. The optional button keylock accessory restricts the ability to operate one of these buttons to a key operation.

When the keylock is installed over the CLOSE button, key operation is required to close the circuit breaker.

Likewise, when the keylock is installed over the OPEN button, key operation is required to open the circuit breaker.

Note that this accessory only impedes access to the pushbutton controls. Other means may be used to close and open the circuit breaker, such as electrically operated accessories including shunt trip devices, undervoltage trip devices, and remote close coils.

- This accessory includes one CES keylock. If two keylocks are required, the two kits are required.
- Specific key patterns, stampings, and “keyed alike” customizations are not possible.
- Each accessory kit includes two padlockable flip covers, two finger guards, and two cheat-hole covers.

**Table 6: Order number**

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLLKKT1

**Keylock bell alarm reset**



Each WL circuit breaker with integral overcurrent protection includes a tripped indicator, which extends when the circuit breaker is tripped via the integral electronic trip unit. This tripped indicator will remain extended until either manually reset (depressed), or electronically reset via the tripped indicator reset coil. This kit includes a clear plastic cover with integrated keylock for blocking access to the tripped indicator.

This lockset and key are identical for all WL circuit breakers (uniquely-keyed locksets are not available).

**Table 7: Order number**

For use with:	Catalog Number
ETU Types 725, 727, 745, 748, & 755	WLTUSC55
ETU Type 776	WLTUSC76

**Cradle-mounted keylock OPEN**



This style of interlock is commonly utilized on drawout main and tie circuit breaker cradles in multiple source power distribution systems. This keylock is used to hold the circuit breaker in the OPEN position.

When installed, this key lock assembly resides in the drawout circuit breaker cradle, near the centerline of the cradle floor, and adjacent to the racking handle of an inserted circuit breaker. This provision may be used with up to two key cylinders manufactured by Kirk and Yale (Superior).

- This provision allows for the installation of either one or two independent keylock cylinders. Because these are independent cylinders, key capture and release schemes between the two key cylinders is not possible.
- Mixing Kirk and Yale (Superior) key cylinders within the same provision is acceptable and permitted.
- When ordered from the factory with a Kirk or Yale cylinder, it will be a random keying pattern – even when ordering multiple circuit breakers. Specific key patterns, stampings, and “keyed alike” customizations are not possible from the

factory. When specific keying requirements are necessary, the provision-only should be ordered from Siemens, and the customized key cylinders should be ordered directly from the lock manufacturer. Manufacturer order numbers for the key cylinder types are located in Table 10.

- When ordering the provision only as a part of a drawout circuit breaker cradle, it will ship installed with installation instructions for connecting the key cylinder(s). The provision is inoperable without at least one key cylinder installed.
- The drill template for modification of the circuit breaker compartment door is found in Figure 1.

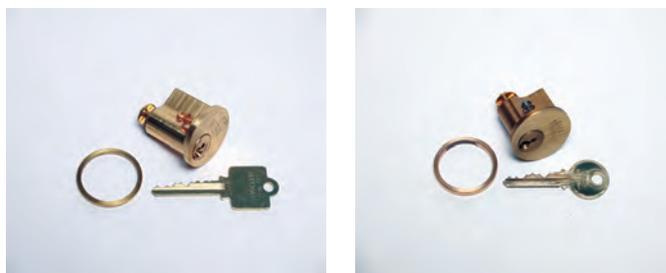
**Table 8: 3-pole order number**

Description:	Catalog Number
Single Provision with one KIRK™ Key (Frame Size 2 & 3)	WLDLKRK
Single Provision with one Yale™ Key (Frame Sizes 2 & 3)	WLDLSUP
Double Provision with two KIRK™ Keys (Frame Size 2 & 3)	WLDLDRK
Double Provision with two Yale™ Keys (Frame Sizes 2 & 3)	WLDLSUP
Single Provision-only (Frame Sizes 2 & 3)	WLDLPR
Double Provision-only (Frame Sizes 2 & 3)	WLDLDR

**Table 9: 4-pole order number**

Description:	Catalog Number
Single Provision with one KIRK™ Key (Frame Size 2)	WL4DLKRK2
Single Provision with one KIRK™ Key (Frame Size 3)	WL4DLKRK3
Single Provision with one Yale™ Key (Frame Sizes 2)	WL4DLSUP2
Single Provision with one Yale™ Key (Frame Sizes 3)	WL4DLSUP3
Double Provision with two KIRK™ Keys (Frame Size 2)	WL4DLDRK2
Double Provision with two KIRK™ Keys (Frame Size 3)	WL4DLDRK3
Double Provision with two Yale™ Keys (Frame Sizes 2)	WL4DLSUP2
Double Provision with two Yale™ Keys (Frame Sizes 3)	WL4DLSUP3
Single Provision-only (Frame Sizes 2)	WL4DLPR2
Single Provision-only (Frame Sizes 3)	WL4DLPR3
Double Provision-only (Frame Sizes 2)	WL4DLDR2
Double Provision-only (Frame Sizes 3)	WL4DLDR3

### Keylock cylinders



When ordering a keylock assembly with either a Kirk or Yale (Superior) key cylinder, the cylinder will be a random keying pattern. Specific key patterns, stampings, and “keyed alike” customizations are not provided by Siemens. When specific keying requirements are necessary, the provision should be ordered from Siemens, and the customized key cylinders should be ordered direct from the lock manufacturer.

The following Table (Table 10) includes the manufacturer specific part numbers for ordering key cylinders compatible with Siemens type WL circuit breakers.

**Table 10: Key cylinder order numbers (Mounting provisions ordered separately)**

Description:	Manufacturer’s Part Number
KIRK™ Key Cylinder	C-900-301
Yale™ Key Cylinder	C-900

### Other lockouts

Aside from padlock provisions and key interlocks, Siemens offers a number of additional accessories for providing means of interlocking or restricting access to energized components.

### Emergency OPEN



This lockout mounts over the mechanical OPEN button on the face of the WL circuit breaker. The large, mushroom style head allows for easy access to quickly open the circuit breaker and de-energize the downstream load. When depressed, it remains depressed until released - holding the circuit breaker trip-free until the device is reset by an operator.

**Table 11: Order number**

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLEPEN

### Cheat-hole covers and button shields



Each type WL circuit breaker includes manual CLOSE and OPEN buttons in the front escutcheon. These buttons are recessed below the escutcheon, but for additional security, an additional finger guard may be applied over the top of the button(s), further requiring a deliberate action to either open or close the circuit breaker. Furthermore, it is possible to restrict access to an even greater degree by adding a cover with only a small hole (Ø 1/8 in.). With this kit, covers may be added to either one or both of the pushbutton controls. You choose. Note that this accessory only impedes access to the pushbutton controls. Other means may be used to close and open the circuit breaker, such as electrically operated accessories including shunt trip devices, undervoltage trip devices, and remote close coils.

- Each accessory kit includes two finger guards and two covers with an Ø 1/8 in. access hole, as well as two padlockable flip covers.

Table 12: Order number

For use with:	Catalog Number
Frame Sizes 1, 2, & 3	WLLKKT

### Cubicle door interlocks

The arc flash hazard risk increases significantly when the circuit breaker compartment door is open with energized bus behind it. Here are some mechanical interlocks to keep a metal barrier between you and the primary conductors.

#### Closed door racking



This accessory prevents the racking of a drawout circuit breaker - in or out - with the circuit breaker compartment door open.

Table 13: Order number

For use with:	Catalog Number
Frame Sizes 2 & 3	WLDRLC5UL

### Door closed while connected



This accessory is designed to prevent opening of the compartment door when the circuit breaker is racked into the CONNECTED position.

- This accessory can be used with WLDRLC5UL.
- This accessory includes instructions for an optional defeat / override function, which can be installed at the user's discretion.
- The drill template for modification of the circuit breaker compartment door is found in Figure 2 and Figure 3.

Table 14: Order number

For use with:	Catalog Number
Frame Size 1	WLDRLC
Frame Sizes 2 & 3	WLDRLC1

### Door closed while circuit breaker CLOSED



This accessory is designed to prevent opening of the compartment door when the circuit breaker is in the CLOSED position.

- This accessory can only be installed on fixed-mounted WL circuit breakers (not suitable for drawout circuit breakers).
- This accessory includes instructions for an optional defeat / override function, which can be installed at the user's discretion.
- The drill template for modification of the circuit breaker compartment door is found in Figure 4.

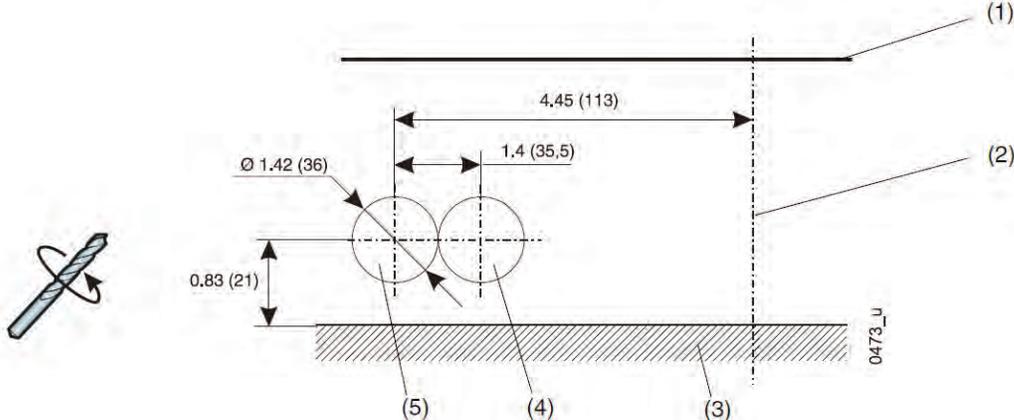
Table 15: Order number

For use with:	Catalog Number
Frame Size 1 (Fixed-Mounted Only)	WLLKOFFDRUL1
Frame Sizes 2 & 3 (Fixed-Mounted Only)	WLLKOFFDRUL3

### Cubicle door drill drawings

Please reference the operating manual for complete instructions.

Figure 1: Cradle-Mounted Keylock OPEN Drill Template

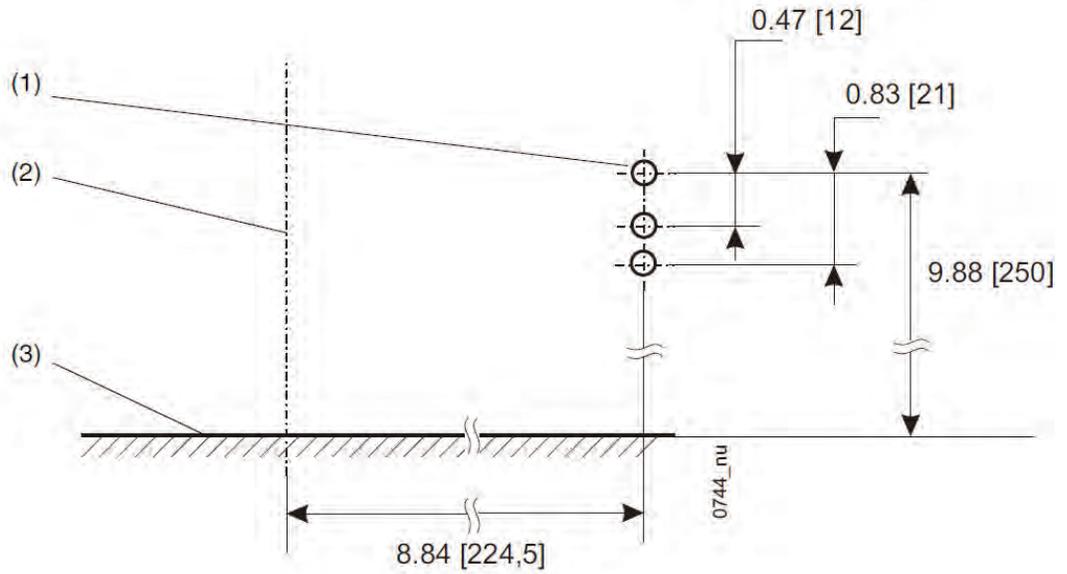


- (1) Lower edge of door cutout
- (2) Center of front panel
- (3) Mounting surface of cradle
- (4) Hole for first key cylinder
- (5) Hole for second key cylinder (only if planned)

## Cubicle door drill drawings

Please reference the operating manual for complete instructions.

Figure 2: Door Closed While Connected Drill Template (Frame Size 1)

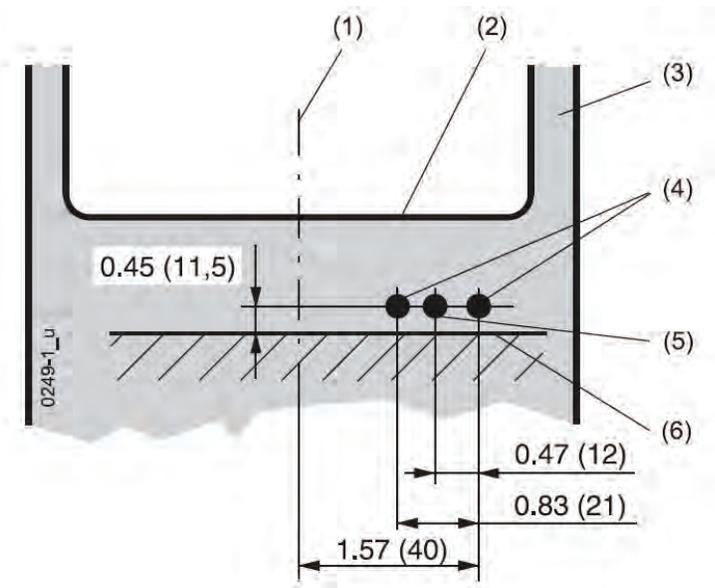


- (1) 3 holes  $\text{Ø } 7/32$  inches
- (2) Centerline of breaker front panel
- (3) Mounting surface

### Cubicle door drill drawings

Please reference the operating manual for complete instructions.

Figure 3: Door Closed While Connected Drill Template (Frame Size 2 & 3)

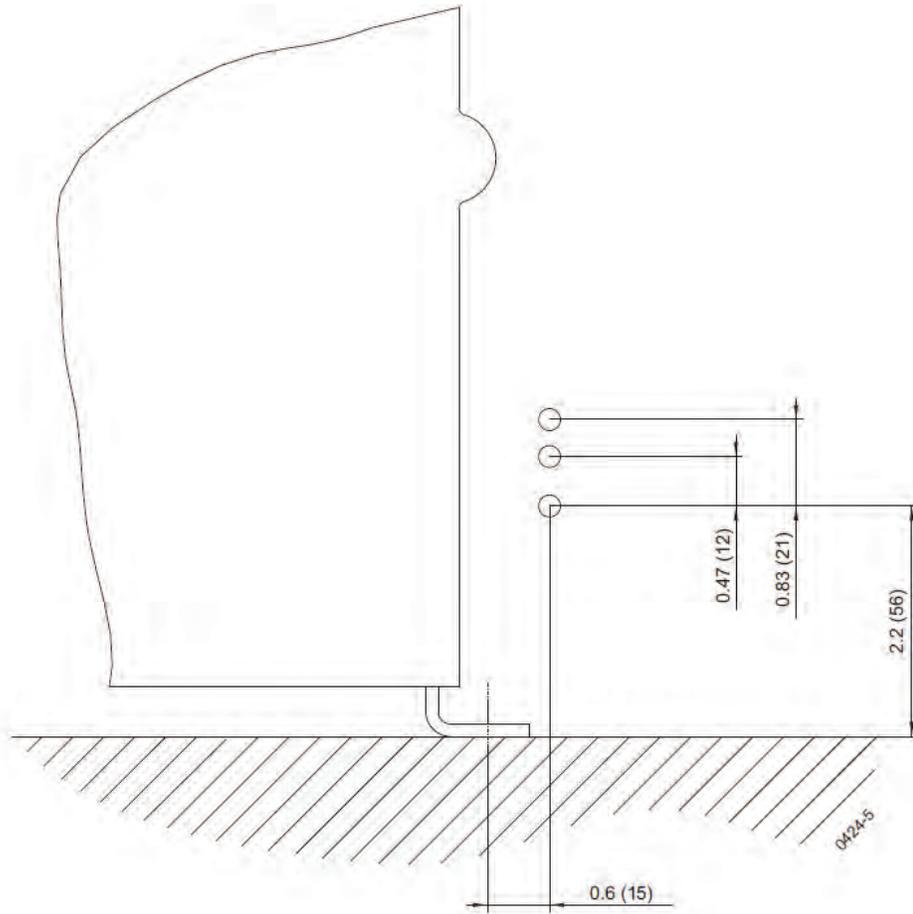


- (1) Centerline of breaker front panel
- (2) Door cutout for breaker front panel
- (3) Inner side of cubicle door
- (4) Hole for manual defeat  $\varnothing \frac{7}{32}$  inches
- (5) Hole for manual defeat  $\varnothing \frac{7}{32}$  inches  
Drill this hole only if a manual defeat is required.
- (6) Mounting surface

## Cubicle door drill drawings

Please reference the operating manual for complete instructions.

Figure 4: Door Closed While Circuit Breaker CLOSED



- (1) Centerline of breaker front panel
- (2) Door cutout for breaker front panel
- (3) Inner side of cubicle door
- (4) Hole for manual defeat  $\text{Ø } 7/32$  inches
- (5) Hole for manual defeat  $\text{Ø } 7/32$  inches  
Drill this hole only if a manual defeat is required.
- (6) Mounting surface



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