

Section 2

Safety Switches

General Duty Safety Switches

General Duty Safety Switches	2-2
------------------------------	-----

Heavy Duty Safety Switches

Phenolic Legend Plate	2-3
Push Button—Pilot Light—Selector Switch	2-3
Key Interlock Systems	2-4
Sample Applications	2-4

Voltage-Indicating Safety Switches

Voltage-indicating safety switches indicate when voltage is present, helping to prevent arc-flash hazards and electric shocks during maintenance work. Voltage indicators are a factory-installed only option. Order the indicators by adding the fuse kit suffix below to the switch catalog number.

Voltage-indicating safety switches can be combined with other safety features such as visible blades, viewing windows and color-coded handles.



Table 2.1: Class J Fuse Kit Suffix

Suffix	Description	\$ Price ▲
SI	Supply Side Indicator	1208.00
LJ	Load Side Indicator	1208.00
LJ2	Supply and Load Side Indicators	2416.00

▲ Add an additional \$120.00 for 30 and 60 A NEMA TYPE 1, 3R and 12 enclosures.

Field-Installed Lug Kit

Kit consists of three line, three load, and two neutral lugs as required for a three-pole 400 A or 600 A general duty switch. Kit can be installed in field on 400 or 600 A Series E3 switches.

Table 2.2: Lug Kit

Switch Rating (A)	Lug Kit Cat. No.	Wire Range/NEC 312.6 AWG/kcmil	Lug Wire Range per Lug AWG/kcmil	\$ Price
400 or 600 A Series E3 ■	GD4060LK	(1) 1/0-600 or (2) 1/0-500 or (4) 1/0-250	(2) 1/0-600 or (4) 1/0-250	404.00

■ Not applicable for use on the 400 A NEMA Type 3R General Duty Safety Switch.

Phenolic Legend Plate

Available engraved and mounted on all heavy duty safety switches, except NEMA 7 and 9. Legend engraved in 1/4 in. high white letters on black background. Customer must provide legend. UL Listed.

To order, add suffix NP to standard Cat. No.

Example: H363-NP

Price adder per legend plate—**\$167.00**

Push Button—Pilot Light—Selector Switch

Push buttons, pilot lights or selector switches are available factory-installed in the cover of NEMA 1, 3R, (4-4X-5) stainless steel or NEMA 12 heavy duty non-fusible safety switches and all double throw switches. Wiring to contact blocks is not available. Customer must furnish catalog number of push button, pilot light or selector switch device desired. UL Listed. Add suffix PB to switch catalog number.

Contact Schneider Electric for catalog number, availability, and pricing prior to quoting a job.



Key Interlock Systems

Factory-installed only on heavy duty and double throw safety switches.

Interlocks are used to prevent the operator from making an unauthorized operation. Not available on hazardous location devices (NEMA 7/9) or fiberglass reinforced polyester (NEMA 4X).

The key interlock system is a simple and easy method of applying individual key interlock units and assemblies to the above equipment so as to require operation in a predetermined sequence. UL Listed.

Quoting:

Contact Schneider Electric for catalog number, availability and pricing prior to quoting a job.

Ordering:

Order cannot be released for production until the following information has been provided:

- End User—Company name, address;
- Function of each lock (e.g., switch to be locked open with key removed, key held when switch is closed);
- Existing Equipment—if switch is to be interlocked with equipment already on site, provide brand of existing lock and key number;
- Other New Equipment—if switch is to be interlocked with new equipment not yet installed at the site, then provide contact person and phone number so that locks may be coordinated;
- Additional information may be required upon order entry;
- Schneider Electric locks supplied unless otherwise specified.

Use these suffixes on switch catalog numbers:

- KI = 1 lock per switch
- KI2 = 1 lock with 2 cylinders per switch
- KIKI = 2 separate locks per switch

Table 2.1: Price Adder Per Lock▲

Switch Type	\$ Price
30–1200 A Heavy Duty	2055.00
30–600 A Double Throw	1988.00

▲ Prices do not apply when more than three devices are interlocked as these schemes normally require more than one key assembly per device.

Sample Applications

Sample Application—1

To prevent two devices from being closed simultaneously.

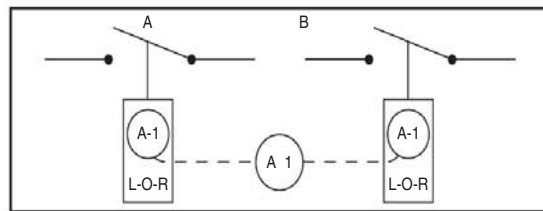


Figure 1

Two devices are shown in Figure 1. In operation they are not closed at the same time. With the interlocks arranged as shown only one key is required in the interlocking system. Both devices are shown open, therefore, the key is free. To close any one device the key is inserted and turned in that particular lock, the key is held in this lock until the device is again locked open. This simple interlocking sequence lends itself to a multitude of applications. The procedure is the same for two devices, neither of which is to be opened at the same time.

Sample Application—2

To prevent opening of switch A when circuit breaker B is closed.

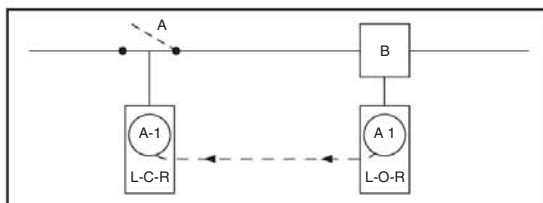


Figure 2

Switch A and circuit breaker B are in closed position. Key A-1 is held in circuit breaker B interlock.

1. Open circuit breaker.
2. Turn key A-1 in L-O-R interlock on circuit breaker B to lock open. Key A-1 is now free.
3. Insert key A-1 in L-C-R interlock on switch A and turn to unlock.
4. Open switch A. Key A-1 is now held. Reverse sequence to restore service.

Sample Application—3

To prevent operation of switch A when circuit breaker B is closed. Permits re-closing of circuit breaker for servicing when switch is locked open.

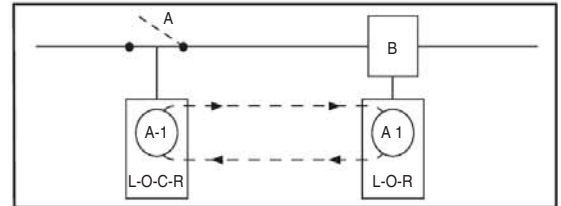


Figure 3

Switch A and circuit breaker B are in closed position. Key A-1 is held in circuit breaker interlock.

5. Open circuit breaker.
6. Turn key A-1 in L-O-R interlock on circuit breaker B to lock open. Key A-1 is now free.
7. Insert key A-1 in L-O-C-R interlock on switch A and turn to unlock.
8. Open switch A.
9. Turn key A-1 in L-O-C-R interlock on switch A to lock open. Key A-1 is now free.
10. Return key A-1 to circuit breaker interlock and unlock for operation during servicing period.

Reverse sequence to restore service.

Sample Application—4 (Main-Tie-Main)

To prevent paralleling of lines A and B; two loads, fed from either source.

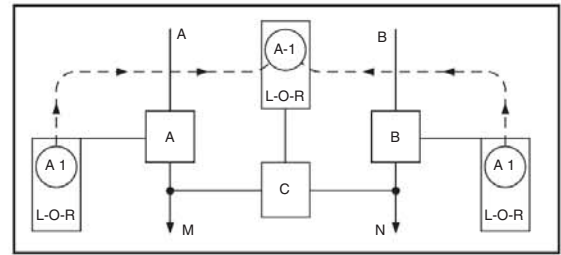


Figure 4

Circuit breaker A is closed to supply load M. Circuit breaker B is closed to supply load N. Tie-circuit breaker C is open. Keys A-1 are held in interlocks on both circuit breakers A and B. Tie-circuit breaker C cannot be closed unless either A or B is locked open.

To transfer load N to circuit breaker A, proceed as follows:

1. Open circuit breaker B.
2. Turn key A-1 in L-O-R interlock on circuit breaker B to lock open. Key A-1 is now free.
3. Insert Key A-1 in L-O-R interlock on tie-circuit breaker C and turn to unlock. Key A-1 is now held.
4. Close tie-circuit breaker C.
5. Reverse sequence to restore service.
6. Load M can be supplied through circuit breaker B in a similar manner.

Locking Position—Designations



Devices locked open with key removed



Devices locked closed with key removed



Devices locked open or closed with key removed



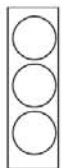
Devices locked open with key held



Devices locked closed with key held



Devices locked open or closed with key held

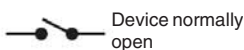


Multi-lock interlock (More than one key per lock)

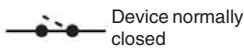
Diagram Symbols

Note:

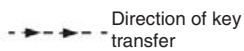
Device locked open = switch in OFF (O) position
Device locked closed = switch in ON (I) position



Device normally open



Device normally closed



Direction of key transfer

Key interchange number
A-1 A-2 A-3



Key