

# Enclosed Safety Switches

## Class 3100

### Catalog

3100CT1602  
R06/19



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# Catalog Number Description

**Table 1 - General Duty Switches Catalog Number Description**

| Number Segment                     | Character   | Description                                                                                    | D | 3 | 2 | 1 | N | RB | — |
|------------------------------------|-------------|------------------------------------------------------------------------------------------------|---|---|---|---|---|----|---|
| Type of Switch                     | Fusible     | L=Light duty                                                                                   |   |   |   |   |   |    |   |
|                                    |             | D=General duty                                                                                 |   |   |   |   |   |    |   |
|                                    | Non-Fusible | DU=General duty                                                                                |   |   |   |   |   |    |   |
| Blades—Switch Poles                | 1           | One-pole                                                                                       |   |   |   |   |   |    |   |
|                                    | 2           | Two-poles                                                                                      |   |   |   |   |   |    |   |
|                                    | 3           | Three-poles                                                                                    |   |   |   |   |   |    |   |
| Voltage Rating                     | 1           | 120 Vac (plug fuse)                                                                            |   |   |   |   |   |    |   |
|                                    | 2           | 240 Vac                                                                                        |   |   |   |   |   |    |   |
| Ampere Rating                      | 1           | 30 A                                                                                           |   |   |   |   |   |    |   |
|                                    | 2           | 60 A                                                                                           |   |   |   |   |   |    |   |
|                                    | 3           | 100 A                                                                                          |   |   |   |   |   |    |   |
|                                    | 4           | 200 A                                                                                          |   |   |   |   |   |    |   |
|                                    | 5           | 400 A                                                                                          |   |   |   |   |   |    |   |
|                                    | 6           | 600 A                                                                                          |   |   |   |   |   |    |   |
|                                    | 7           | 800 A                                                                                          |   |   |   |   |   |    |   |
| Neutral                            | N           | Factory-installed neutral (neutrals are field-installed on most general duty safety switches). |   |   |   |   |   |    |   |
| Enclosure                          | No suffix   | NEMA Type 1                                                                                    |   |   |   |   |   |    |   |
|                                    | R           | NEMA Type 3R                                                                                   |   |   |   |   |   |    |   |
|                                    | RB          | NEMA Type 3R (bolt-on hub provision)                                                           |   |   |   |   |   |    |   |
| Factory Modifications <sup>1</sup> | N/A         |                                                                                                |   |   |   |   |   |    |   |

1. Factory modifications are not available for Light duty or General duty safety switches.

# General Duty Safety Switches

## Product Description

Light duty safety switches are ideal for home applications when disconnecting power to workshops, hobby rooms, furnaces and garages. General duty safety switches are designed for residential and commercial applications where durability and economy are prime considerations. Typical loads include lighting, air conditioning and appliances. They are suitable for use as service equipment when equipped with a factory-installed neutral assembly or field-installed service grounding kit, as applicable. Light duty and general duty safety switches are UL<sup>SM</sup> Listed, File E2875, and meet or exceed the NEMA<sup>®</sup> Standard KS1.

**Light Duty**



**General Duty**



## Configuration

- One, fusible, switched pole with insulated neutral
- Two, fusible, switched poles with insulated neutral
- Three, fusible, switched poles with insulated neutral
- Two or three, non-fusible, switched poles without insulated neutral

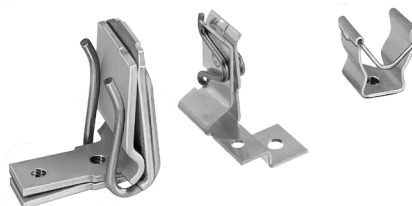
## Construction

**Visible Blade Construction**

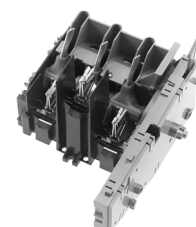


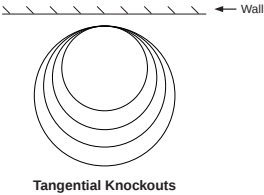
- Indoor NEMA Type 1 or Outdoor NEMA Type 3R enclosures
- Visible blades for positive indication that the switch is “OFF”
- Quick-make, quick-break operating mechanism (general duty only)
- Lugs suitable for aluminum or copper conductors. See Equipment Grounding Kits, page 9 for additional lug data
- Spring reinforced, plated copper fuse clips

**Spring Reinforced Fuse Clips**



**Operating Mechanism with Line Base Series F**





- Series F handle/lock-plate is a field-replaceable modular design
- Series F operating mechanism is an enclosed, field-replaceable, modular design
- Series F NEMA Type 3R covers have side opening construction
- Top endwalls in 30–200 A NEMA Type 3R switches have bolt-on hub provisions
- Multiple padlock provisions in “OFF” position
- Tangential combination knockouts alleviate the need for offset bends

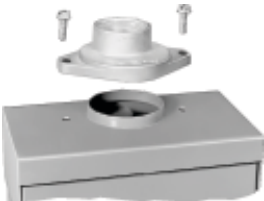
Enclosures

- Enclosures are finished in gray, baked enamel that is electrodeposited on cleaned, phosphatized steel.
- NEMA Type 1 general purpose, indoor
  - NEMA Type 3R general purpose, outdoor

Accessories

Rainproof Hubs

RB Hub Provisions  
30–200 A



Bolt-on hubs for rainproof applications. Switches with RB suffix accept 3/4 in. (19 mm) through 2-1/2 in. (63 mm) bolt-on hubs. Switches with R suffix have blank endwalls.

Table 2 - Rainproof Bolt-On Hubs—For Use on NEMA Type 3R Enclosures

| Con-<br>duit<br>Size       | 3/4  | 1    | 1–1/4 | 1 1/2 | 2    | 2–2/1 | 3    | 3–1/2 | 4    | Clos-<br>ing<br>Cap |
|----------------------------|------|------|-------|-------|------|-------|------|-------|------|---------------------|
| Hub<br>Cat.<br>Num-<br>ber | B075 | B100 | B125  | B150  | B200 | B250  | B300 | B350  | B400 | BCAP                |

NEMA Type 3R rainproof enclosures with a catalog number ending in RB, have a bolt-on closing cap factory-installed. Order bolt-on hubs separately. Refer to the information in Rainproof Bolt-On Hubs—For Use on NEMA Type 3R Enclosures, page 7. Hubs through size 2-1/2 in. (63 mm), can be directly installed on RB devices. Devices requiring 3 in. (76 mm) or larger hubs, must have holes cut in the field. Gaskets are provided on 3 in. (76 mm) and larger hubs. All hubs are UL Listed for indoor and rainproof applications and suitable for use with conduits containing an ANSI standard taper pipe thread.

## Class R Fuse Kits

**Class R Fuse Kits  
Series F Switches  
Only**



- This kit rejects all but Class R fuses when installed
- For systems up to 100,000 rms symmetrical amperes

## Fuse Puller Kits

**Fuse Puller Kit  
Series F Switches  
Only**



The Fuse Puller kits consist of three fuse pullers as required for a three-pole, fusible, 60 or 100 A general duty switch. Kits can be field installed into 60 or 100 A, Series F switches.

**Table 3 - Fuse Puller Kits**

| Switch Ampere Rating | Series Number | Fuse Puller Kit Catalog Number |
|----------------------|---------------|--------------------------------|
| 60                   | F             | FPK03                          |
| 100                  | F             | FPK0610                        |

## Equipment Grounding Kits

### Grounding Kits

#### 30 and 60 A PK3GTA1



#### 100 A GTK0610



#### 200 A PKOGTA2



- Aluminum or copper conductors
- Field-installed

**Table 4 - Equipment Grounding Kits**

| Switch Ampere Rating | Catalog Number       | Lug Wire Range AWG                                         |
|----------------------|----------------------|------------------------------------------------------------|
| 30 <sup>2</sup>      | Std.                 | (1) 14 – 10 Cu or (1) 12 – 8 Al                            |
| 30                   | PK3GTA1              | (3) 14–4 Cu or (3) 12–4 Al or (6) 14–12 Cu or (6) 12–10 Al |
| 60 <sup>3</sup>      | GTK03                | (2) 14–4 Cu or (2) 12–4 Al (4) 14–12 Cu or (4) 12–10 Al    |
| 100                  | GTK0610              | (2) 14–1/0 Cu or (2) 12–1/0 Al (2) 14–6 Cu or (2) 12–6 Al  |
| 200                  | PKOGTA2              | (2) 10–2/0 Cu or (2) 6–2/0 Cu Al                           |
| 400, 600             | PKOGTA2 <sub>4</sub> | (2) 10–2/0 Cu or (2) 6–2/0 Cu Al                           |
| 800                  | PKOGTA3              | (6) 6–3/0 Al/Cu Max.                                       |

## Electrical Interlock Kits

Electrical interlocks for Series F 100–200 A general duty safety switches and Series F 60 A fusible general duty safety switches are available in kit form for field installation. Each kit contains instructions for proper field mounting. A pivot arm operates from the switch mechanism, breaking the control circuit before the main switch blades break. Switches with electrical interlocks installed are UL Listed.

**Table 5 - Electrical Interlock Kits**

| Switch Ampere Rating | Electrical Interlock Kit Catalog Number <sup>5</sup> |
|----------------------|------------------------------------------------------|
| Fusible Series F 60  | EIK031 or EIK032                                     |
| Series F 100–200     | EIK-1 or EIK-2                                       |

2. Light duty safety switches.

3. 60 A non-fusible switches accept PK3GTA1.

4. Two are required if the ground conductors are run in parallel.

5. Electrical interlock kit catalog numbers ending with a “1” indicate one normally open and one normally closed contact; ending with a “2” indicates two normally open and two normally closed contacts. Kits are UL Listed.

**Table 6 - Electrical Interlock Contact Ratings**

| Interlock Type <sup>6</sup>                               | AC 50 or 60 Hz |         |         |         | DC    |              |         |
|-----------------------------------------------------------|----------------|---------|---------|---------|-------|--------------|---------|
|                                                           | Volts          | Make    | Break   | Cont.   | Volts | Make / Break | Cont.   |
| 1 N. O. / 1 N. C. Contact<br>(Ending in 1 <sup>7</sup> )  | 120            | 40.00 A | 15.00 A | 15.00 A | 115   | 0.50 A       | 15.00 A |
|                                                           | 240            | 20.00 A | 10.00 A | 15.00 A | 230   | 0.25 A       | 15.00 A |
| 2 N. O. / 2 N. C. Contacts<br>(Ending in 2 <sup>8</sup> ) | 120            | 30.00 A | 3.00 A  | 10.00 A | 115   | 1.00 A       | 10.00 A |
|                                                           | 240            | 15.00 A | 1.50 A  | 10.00 A | 230   | 0.30 A       | 10.00 A |

## Optional Field-Installed Lug Kit 400–600 A

**Field-Installed Lug Kit for 400 and 600 A Devices**



Kit consists of three line, three load and two neutral lugs as required for a three-pole 400 A (NEMA Type 1) or 600 A (NEMA Type 1 or 3R) general duty switch.

**Table 7 - Field-Installed Lug Kit 400–600 A**

| Switch Ampere Rating           | Lug Kit Catalog Number | Wire Range/NEC                                        | Lug Wire Range                     |
|--------------------------------|------------------------|-------------------------------------------------------|------------------------------------|
| 400 or 600 Series <sup>9</sup> | GD4060LK               | 1-1/0-600 kcmil<br>2-1/0-500 kcmil<br>4-1/0-250 kcmil | 2-1/0-600 kcmil<br>4-1/0-250 kcmil |

## Class J Fuse Kit 600 A

The Class J Fuse Kit consists of three Class J fuse adapters as required for a two- or three-pole, fusible, 600 A general duty switch.

**Table 8 - Class J Fuse Kit 600 A**

| Switch Ampere Rating | Class J Kit Cat. No. |
|----------------------|----------------------|
| 600 A                | GDJK600              |

6. Single-pole single-throw interlock kits are rated 1/2 hp at 110 and 220 Vac.  
 7. An Electrical interlock catalog number ending in 1 uses a 9007A01 limit switch.  
 8. An Electrical interlock catalog number ending in 2 uses a 9007C03 limit switch.  
 9. Not suitable for use on 400 A, NEMA Type 3R.

## Applications

### Light Duty



**Light Duty Safety Switches** are ideal for home applications in disconnecting power to workshops, hobby rooms, furnaces and garages:

- Visible blades
- 10,000 A short circuit current rating
- 30 A, fusible and non-fusible, 120 Vac, 120/240 Vac
- Replacement parts not available
- Load-make, load-break rated for the switch current rating except L111N
- Horsepower rated except L111N
- Available with plug or cartridge fuse holders
- Grounding kit is standard

### General Duty



**General Duty Safety Switches** are designed for the following applications:

- Residential and light commercial applications
- Infrequent or moderate operations
- 240 Vac maximum
- Up to 100,000 rms symmetrical amperes, using appropriately rated Class R fuses and Class R Fuse Kit, or Class T, or Class J fuses and appropriate Class J Kit
- 30–800 A
- Horsepower rated
- Load-make, load-break rated for the switch current rating

**Table 9 - Fusible Safety Switch Short Circuit Current Rating**

| Fuse Class          | UL Listed Short Circuit Rating |
|---------------------|--------------------------------|
| Plug                | 10 kA                          |
| H, K                | 10 kA                          |
| J <sup>10</sup> , R | 100 kA                         |
| T <sup>11</sup>     | 100 kA                         |

| Fuse Class or Circuit Breaker Type <sup>12</sup> | UL Listed Short Circuit Rating |
|--------------------------------------------------|--------------------------------|
| Any Brand Circuit Breaker                        | 10 kA                          |
| B, H, or J PowerPacT™ Circuit Breaker            | Up to 65 kA <sup>13</sup>      |
| H, K                                             | 10 kA                          |
| J, R                                             | 100 kA <sup>14</sup>           |
| T                                                | 100 kA <sup>15</sup>           |

10. Only applicable to 200–600 A except D325NT, D325NTR, D326NT and D326NTR.

11. Only applicable to D325NT, D325NTR, D326NT, D326NTR, T327N and T327NR.

12. Ampere rating of fuse or circuit breaker not to exceed switch ampere ratings.

13. Only applicable to DU324 and DU324NRB. BD, HD, JD = 25 kA maximum.

14. SCCR = 50 kA, applicable to DU222RB, DU322 and DU322RB.

15. Only applicable to DU323, DU323RB, DU325 and DU326. Only applicable to DU323, DU323RB, DU325 and DU326.

## Standards

General duty safety switches are manufactured in accordance with these standards:

- UL 98, Standard for Enclosed and Dead Front Switches. UL Listed File E2875
- NEMA Standards Publication KS1, Enclosed Switches
- Federal Specifications WS-865c for Type NDS (NEMA Type 1) and Type LD (NEMA Type 3R)

**Table 10 - Terminal Lug Data**

| Ampere Rating <sup>16</sup> | Conductors Per Phase | Wire Range Wire Bending Space Per NEC Table 312.6 AWG/kcmil | Lug Wire Range AWG/kcmil                      |
|-----------------------------|----------------------|-------------------------------------------------------------|-----------------------------------------------|
| 30 <sup>17</sup>            | 1                    | 12–8 (Al) or 14–8 (Cu)                                      | 12–8 (Al) or 14–8 (Cu)                        |
| 30                          |                      | 12–6 (Al) or 14–6 (Cu)                                      | 12–6 (Al) or 14–6 (Cu)                        |
| 60                          | 1                    | 12–3 (Al) or 14–3 (Cu)                                      | 12–2 (Al) or 14–2 (Cu)                        |
| 100                         | 1                    | 12–1 (Al) or 14–1 (Cu)                                      | 12–1/0 (Al) or 14–1/0 (Cu)                    |
| 200                         | 1                    | 6–250 (Al/Cu)                                               | 6–300 (Al/Cu)                                 |
| 400 NEMA Type 1             | 1 or 2               | 1/0–600 (Al/Cu) or 1/0–300 (Al/Cu)                          | (1) 1/0–750 (Al/Cu) or<br>(2) 1/0–300 (Al/Cu) |
| 400 NEMA Type 3R            | 2                    | 1/0–250 (Al/Cu)                                             | (1) 1/0–600 (Al/Cu) or<br>(2) 1/0–250 (Al/Cu) |
| 600                         | 2                    | 4–500 (Al/Cu)                                               | 4–600 (Al/Cu)                                 |
| 800                         | 3                    | 3/0–500 (Al/Cu)                                             | 3/0–500 (Al/Cu)                               |

**Table 11 - Accessories for Current Series General Duty Safety Switches**

| Catalog Number | Series | Class J Fuse Kit Available for Field-Installation | Class R Fuse Kit Available for Field-Installation <sup>18</sup> | Fuse Puller Kit | Solid Neutral Kit (Al/Cu) | Equipment Grounding Kit (Al/Cu) | Optional Field Installed Lug Kit (Al/Cu) <sup>19</sup> | Electrical Interlock Kit (1NO/1NC Contacts) | Electrical Interlock Kit (2NO/2NC Contacts) |
|----------------|--------|---------------------------------------------------|-----------------------------------------------------------------|-----------------|---------------------------|---------------------------------|--------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| L111N          | E2     | —                                                 | —                                                               | —               | Std.                      | Std.                            | —                                                      | —                                           | —                                           |
| L211N          |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| L221N          |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D211N          | E3     | —                                                 | —                                                               | —               | Std.                      | PK3GTA1                         | —                                                      | —                                           | —                                           |
| D211NRB        | E2     |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D221N          | E3     | —                                                 | DRK30                                                           | —               | Std.                      | PK3GTA1                         | —                                                      | —                                           | —                                           |
| D221NRB        |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D222N          | F1     | —                                                 | RFK03H                                                          | FPK03           | Std.                      | GTK03                           | —                                                      | EIK031                                      | EIK032                                      |
| D222NRB        |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D223N          | F3     | —                                                 | RFK10                                                           | FPK0610         | Std.                      | GTK0610                         | VCE-L02114S1                                           | EIK1                                        | EIK2                                        |
| D223NRB        |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D224N          | F1     | —                                                 | HRK1020                                                         | —               | Std. <sup>20</sup>        | PKOGTA2                         | VCE-L030516-H1                                         | EIK1                                        | EIK2                                        |
| D224NRB        |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |

16. 30–100 A switches suitable for 140°F (60°C) or 167°F (75°C) conductors. 200–800 A switches suitable for 167°F (75°C) conductors.

17. Light duty switches only.

18. When installed, this kit rejects all but Class R fuses.

19. Enclosed QO200 (60 A) molded case switch.

20. VCEL02114S1 and VCEL030516H1 are Versa-Crimp™ lugs. GD4060LK is a mechanical lug kit.

**Table 11 - Accessories for Current Series General Duty Safety Switches (Continued)**

| Catalog Number        | Series | Class J Fuse Kit Available for Field-Installation | Class R Fuse Kit Available for Field-Installation <sup>21</sup> | Fuse Puller Kit | Solid Neutral Kit (Al/Cu) | Equipment Grounding Kit (Al/Cu) | Optional Field Installed Lug Kit (Al/Cu) <sup>22</sup> | Electrical Interlock Kit (1NO/1NC Contacts) | Electrical Interlock Kit (2NO/2NC Contacts) |
|-----------------------|--------|---------------------------------------------------|-----------------------------------------------------------------|-----------------|---------------------------|---------------------------------|--------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| D225N                 | E3     | —                                                 | DRK40                                                           | —               | Std.                      | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| D225NR                | E1     |                                                   |                                                                 |                 |                           |                                 | —                                                      |                                             |                                             |
| D226N                 | E3     | GDJK600                                           | DRK600                                                          | —               | Std.                      | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| D226NR                | E1     |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D321N                 | E3     | —                                                 | DRK30                                                           | —               | Std.                      | PK3GTA1                         | —                                                      | —                                           | —                                           |
| D321NRB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D322N                 | F1     | —                                                 | RFK03H                                                          | FPK03           | Std.                      | GTK03                           | —                                                      | EIK031                                      | EIK032                                      |
| D322NRB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D323N                 | F3     | —                                                 | RFK10                                                           | FPK0610         | Std.                      | GTK0610                         | VCE-L02114S1                                           | EIK1                                        | EIK2                                        |
| D323NRB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D324N                 | F1     | —                                                 | HRK1020                                                         | —               | Std. <sup>24</sup>        | PKOGTA2                         | VCE-L030516-H1                                         | EIK1                                        | EIK2                                        |
| D324NRB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| D325N                 | E3     | —                                                 | DRK40                                                           | —               | Std.                      | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| D325NT                |        |                                                   | —                                                               |                 |                           |                                 |                                                        |                                             |                                             |
| D325NR                | E1     | —                                                 | DRK40                                                           | —               | Std.                      | PKOGTA2 <sub>23</sub>           | —                                                      | —                                           | —                                           |
| D325NTR               |        |                                                   | —                                                               |                 |                           |                                 |                                                        |                                             |                                             |
| D326N                 | E3     | GDJK600                                           | DRK600                                                          | —               | Std.                      | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| D326NT                |        | —                                                 | —                                                               |                 |                           |                                 |                                                        |                                             |                                             |
| D326NR                | E1     | GDJK600                                           | DRK600                                                          | —               | Std.                      | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| D326NTR               |        | —                                                 | —                                                               |                 |                           |                                 |                                                        |                                             |                                             |
| DU221RB               | E2     | —                                                 | —                                                               | —               | —                         | PK3GTA1                         | —                                                      | —                                           | —                                           |
| DU222RB               | E1     | —                                                 | —                                                               | —               | —                         | PK3GTA1                         | —                                                      | —                                           | —                                           |
| DU321                 | E2     | —                                                 | —                                                               | —               | —                         | PK3GTA1                         | —                                                      | —                                           | —                                           |
| DU321RB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| DU322                 | E1     | —                                                 | —                                                               | —               | —                         | PK3GTA1                         | —                                                      | —                                           | —                                           |
| DU322RB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| DU323                 | F3     | —                                                 | —                                                               | —               | SN0610                    | GTK0610                         | VCE-L02114S1                                           | EIK1                                        | EIK2                                        |
| DU323RB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| DU324                 | F1     | —                                                 | —                                                               | —               | SN20 <sub>24</sub>        | PKOGTA2                         | VCE-L030516-H1                                         | EIK1                                        | EIK2                                        |
| DU324RB               |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |
| DU325                 | E3     | —                                                 | —                                                               | —               | —                         | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| DU326                 | E3     | —                                                 | —                                                               | —               | D600SN                    | PKOGTA2 <sub>23</sub>           | GD4060LK                                               | —                                           | —                                           |
| QO200TR <sub>25</sub> | G3     | —                                                 | —                                                               | —               | —                         | Std.                            | —                                                      | —                                           | —                                           |

21. When installed, this kit rejects all but Class R fuses.

22. Enclosed QO200 (60 A) molded case switch.

23. Use two PKOGTA2 if grounding conductors are run in parallel.

24. VCELO2114S1 and VCELO30516H1 are Versa-Crimp™ lugs. GD4060LK is a mechanical lug kit.

25. For 200% neutral, order one additional neutral kit SN20A and one neutral jumper kit SN20NI.

**Table 11 - Accessories for Current Series General Duty Safety Switches (Continued)**

| Catalog Number          | Series | Class J Fuse Kit Available for Field-Installation | Class R Fuse Kit Available for Field-Installation <sup>26</sup> | Fuse Puller Kit | Solid Neutral Kit (Al/Cu) | Equipment Grounding Kit (Al/Cu) | Optional Field Installed Lug Kit (Al/Cu) <sup>27</sup> | Electrical Interlock Kit (1NO/1NC Contacts) | Electrical Interlock Kit (2NO/2NC Contacts) |
|-------------------------|--------|---------------------------------------------------|-----------------------------------------------------------------|-----------------|---------------------------|---------------------------------|--------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| QO260NATS <sub>26</sub> | E2     |                                                   |                                                                 |                 | —                         | Std.                            |                                                        |                                             |                                             |
| QO2000NRB <sub>27</sub> | E1     |                                                   |                                                                 |                 | Std.                      | PKOGTA2                         |                                                        |                                             |                                             |
| QO2000NS <sub>27</sub>  | E1     |                                                   |                                                                 |                 | Std.                      | PKOGTA2                         |                                                        |                                             |                                             |
| T327N                   | E1     | —                                                 | —                                                               | —               | Std.                      | PKOGTA3                         | —                                                      | —                                           | —                                           |
| T327NR                  |        |                                                   |                                                                 |                 |                           |                                 |                                                        |                                             |                                             |

**Table 12 - 30–800 A Horsepower Ratings General Duty Safety Switches**

| Catalog Number | Series | Horsepower Ratings |      |         |                     |         |                     |
|----------------|--------|--------------------|------|---------|---------------------|---------|---------------------|
|                |        | 120 Vac            |      | 240 Vac |                     | 240 Vac |                     |
|                |        | Std.               | Max. | Std.    |                     | Max.    |                     |
|                |        | 1Ø                 | 1Ø   | 1Ø      | 3Ø                  | 1Ø      | 3Ø                  |
| L111N          | E2     | —                  | —    | —       | —                   | —       | —                   |
| L211N          |        | 1/2                | 2    | 1–1/2   |                     | 3       |                     |
| L221N          |        | 1/2                | 2    | 1–1/2   |                     | 3       |                     |
| D211N          | E3     | 1/2                | 2    | 1–1/2   | —                   | 3       | —                   |
| D211NRB        | E2     |                    |      |         |                     |         |                     |
| D221N          | E3     | —                  | —    | 1–1/2   | 3 <sup>28</sup>     | 3       | 7–1/2 <sup>28</sup> |
| D221NRB        |        |                    |      |         |                     |         |                     |
| D222N          | F1     | 1–1/2              | 3    | 3       | 7–1/2 <sup>28</sup> | 10      | 15 <sup>28</sup>    |
| D222NRB        |        |                    |      |         |                     |         |                     |
| D223N          | F3     | —                  | —    | 7–1/2   | 15 <sup>28</sup>    | 15      | 30 <sup>28</sup>    |
| D223NRB        |        |                    |      |         |                     |         |                     |
| D224N          | F1     | —                  | —    | 15      | 25 <sup>28</sup>    | —       | 60 <sup>28</sup>    |
| D224NRB        |        |                    |      |         |                     |         |                     |
| D225N          | E3     | —                  | —    | —       | —                   | —       | —                   |
| D225NR         | E1     | —                  | —    | —       | —                   | —       | —                   |
| D226N          | E3     | —                  | —    | —       | —                   | —       | —                   |
| D226NR         | E1     | —                  | —    | —       | —                   | —       | —                   |
| D321N          | E3     | —                  | —    | 1–1/2   | 3                   | 3       | 7–1/2               |
| D321NRB        |        |                    |      |         |                     |         |                     |
| D322N          | F1     | 1–1/2              | 3    | 3       | 7–1/2               | 10      | 15                  |
| D322NRB        |        |                    |      |         |                     |         |                     |
| D323N          | F3     | —                  | —    | 7–1/2   | 15                  | 15      | 30                  |
| D323NRB        |        |                    |      |         |                     |         |                     |

26. When installed, this kit rejects all but Class R fuses.

27. Enclosed QO200 (60 A) molded case switch.

26. For 200% neutral, order one additional neutral kit SN20A and one neutral jumper kit SN20NI.

27. Enclosed QO2000 (100 A) molded case switch.

28. For corner grounded delta systems only, use switching poles for ungrounded conductors.

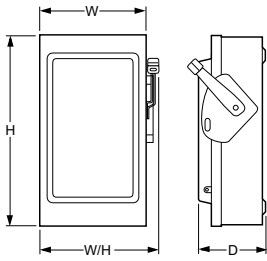
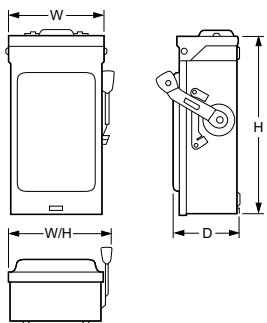
**Table 12 - 30–800 A Horsepower Ratings General Duty Safety Switches (Continued)**

| Catalog Number          | Series | Horsepower Ratings |      |         |     |         |       |
|-------------------------|--------|--------------------|------|---------|-----|---------|-------|
|                         |        | 120 Vac            |      | 240 Vac |     | 240 Vac |       |
|                         |        | Std.               | Max. | Std.    |     | Max.    |       |
|                         |        | 1Ø                 | 1Ø   | 1Ø      | 3Ø  | 1Ø      | 3Ø    |
| D324N                   | F1     | —                  | —    | 15      | 25  | —       | 60    |
| D324NRB                 |        |                    |      |         |     |         |       |
| D325N                   | E3     | —                  | —    | —       | 50  | —       | 125   |
| D325NT                  |        |                    |      |         |     |         | —     |
| D325NR                  | E1     | —                  | —    | —       | 50  | —       | 125   |
| D325NTR                 |        |                    |      |         |     |         | —     |
| D326N                   | E3     | —                  | —    | —       | 75  | —       | 150   |
| D326NT                  |        |                    |      |         |     |         | —     |
| D326NR                  | E1     | —                  | —    | —       | 75  | —       | 150   |
| D326NTR                 |        |                    |      |         |     |         | —     |
| DU221RB                 | E2     | —                  | —    | —       | —   | 3       | —     |
| DU222RB                 | E1     | —                  | —    | —       | —   | 10      | —     |
| DU321                   | E1     | —                  | —    | —       | —   | 3       | 7–1/2 |
| DU321RB                 |        |                    |      |         |     |         |       |
| DU322                   | E2     | —                  | —    | —       | —   | 10      | 15    |
| DU323RB                 |        |                    |      |         |     |         |       |
| DU323                   | F3     | —                  | —    | —       | —   | 15      | 30    |
| DU323RB                 |        |                    |      |         |     |         |       |
| DU324                   | F1     | —                  | —    | —       | —   | 15      | 60    |
| DU324RB                 |        |                    |      |         |     |         |       |
| DU325                   | E3     | —                  | —    | —       | —   | —       | 125   |
| DU326                   | E3     | —                  | —    | —       | —   | —       | 150   |
| QO200TR <sup>29</sup>   | G3     | —                  | —    | —       | —   | 10      | —     |
| QO260NATS <sup>29</sup> | E2     | —                  | —    | —       | —   | 10      | —     |
| QO2000NRB <sup>30</sup> | E1     | —                  | —    | —       | —   | 20      | —     |
| QO2000NS <sup>30</sup>  | E1     | —                  | —    | —       | —   | 20      | —     |
| T327N                   | E1     | —                  | —    | —       | 100 | —       | —     |
| T327NR                  |        | —                  | —    | —       | 100 | —       | 100   |

29. Enclosed QO200 (60 A) molded case switch.

30. Enclosed QO2000 (100 A) molded case switch.

# Ratings and Dimensions

**Table 13 - Switch Dimensions**
**Typical NEMA Type 1**

**Typical NEMA Type 3R**


| Catalog Number        | Series | H     |      | W     |     | W/H   |     | D     |     |
|-----------------------|--------|-------|------|-------|-----|-------|-----|-------|-----|
|                       |        | in.   | mm   | in.   | mm  | in.   | mm  | in.   | mm  |
| L111N <sub>31</sub>   | E2     | 7.63  | 194  | 5.00  | 127 | 6.13  | 156 | 4.00  | 102 |
| L211N <sub>31</sub>   | E2     | 7.63  | 194  | 5.00  | 127 | 6.13  | 156 | 4.00  | 102 |
| L221N <sub>31</sub>   | E2     | 7.63  | 194  | 5.00  | 127 | 6.13  | 156 | 4.00  | 102 |
| D211N <sub>31</sub>   | E3     | 9.25  | 235  | 6.75  | 171 | 7.25  | 184 | 3.63  | 92  |
| D211NRB <sub>31</sub> | E2     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75  | 95  |
| D221N <sub>31</sub>   | E3     | 9.25  | 235  | 6.75  | 171 | 7.25  | 184 | 3.63  | 92  |
| D221NRB <sub>31</sub> | E3     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75  | 95  |
| D222N                 | F1     | 14.60 | 371  | 6.51  | 165 | 7.45  | 189 | 4.87  | 124 |
| D222NRB               | F1     | 14.88 | 378  | 6.63  | 168 | 7.45  | 189 | 4.87  | 124 |
| D223N                 | F3     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50  | 165 |
| D223NRB               | F3     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50  | 165 |
| D224N                 | F1     | 29.00 | 737  | 17.25 | 438 | 19.00 | 483 | 8.25  | 210 |
| D224NRB               | F1     | 29.25 | 743  | 17.25 | 438 | 19.00 | 483 | 8.25  | 210 |
| D225N <sub>31</sub>   | E3     | 45.12 | 1146 | 24.00 | 610 | 24.88 | 632 | 8.88  | 226 |
| D225NR                | E3     | 30.63 | 778  | 21.38 | 543 | 22.25 | 565 | 10.13 | 257 |
| D226N <sub>31</sub>   | E3     | 49.13 | 1248 | 24.00 | 610 | 24.88 | 632 | 8.88  | 226 |
| D226NR <sub>31</sub>  | E3     | 49.13 | 1248 | 24.75 | 629 | 25.13 | 638 | 8.88  | 226 |
| D321N <sub>31</sub>   | E3     | 9.25  | 235  | 6.75  | 171 | 7.25  | 184 | 3.63  | 92  |
| D321NRB <sub>31</sub> | E3     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75  | 95  |
| D322N                 | F1     | 14.60 | 371  | 6.51  | 165 | 7.45  | 189 | 4.87  | 124 |
| D322NRB               | F1     | 14.88 | 378  | 6.63  | 168 | 7.45  | 189 | 4.87  | 124 |
| D323N                 | F3     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50  | 165 |
| D323NRB               | F3     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50  | 165 |
| D324N                 | F1     | 29.00 | 737  | 17.25 | 438 | 19.00 | 483 | 8.25  | 210 |
| D324NRB               | F1     | 29.25 | 743  | 17.25 | 438 | 19.00 | 483 | 8.25  | 210 |
| D325N <sub>31</sub>   | E3     | 45.12 | 1146 | 24.00 | 610 | 24.88 | 632 | 8.88  | 226 |
| D325NT <sub>31</sub>  | E3     | 45.12 | 1146 | 24.00 | 610 | 24.88 | 632 | 8.88  | 226 |
| D325NR                | E1     | 30.63 | 778  | 21.38 | 543 | 22.25 | 565 | 10.13 | 257 |
| D325NTR               | E1     | 30.63 | 778  | 21.38 | 543 | 22.25 | 565 | 10.13 | 257 |
| D326N <sub>31</sub>   | E3     | 49.13 | 1248 | 24.00 | 610 | 24.88 | 632 | 8.88  | 226 |

31. Does not have a cover draw as indicated in above drawing.

**Table 13 - Switch Dimensions (Continued)**

| Catalog Number           | Series | H     |      | W     |     | W/H   |     | D    |     |
|--------------------------|--------|-------|------|-------|-----|-------|-----|------|-----|
|                          |        | in.   | mm   | in.   | mm  | in.   | mm  | in.  | mm  |
| D326NT <sub>32</sub>     | E3     | 49.13 | 1248 | 24.00 | 610 | 24.88 | 632 | 8.88 | 226 |
| D326NR                   | E1     | 49.13 | 1248 | 24.75 | 629 | 25.13 | 638 | 8.88 | 226 |
| D326NTR                  | E1     | 49.13 | 1248 | 24.75 | 629 | 25.13 | 638 | 8.88 | 226 |
| DU221RB <sub>32</sub>    | E2     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75 | 95  |
| DU222RB <sub>32</sub>    | E1     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75 | 95  |
| DU321 <sub>32</sub>      | E2     | 9.25  | 235  | 6.75  | 171 | 7.25  | 184 | 3.63 | 92  |
| DU321RB <sub>32</sub>    | E2     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75 | 95  |
| DU322 <sub>32</sub>      | E1     | 9.25  | 235  | 6.75  | 171 | 7.25  | 184 | 3.63 | 92  |
| DU322RB <sub>32</sub>    | E1     | 9.63  | 245  | 7.25  | 184 | 7.75  | 197 | 3.75 | 95  |
| DU323                    | F1     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50 | 165 |
| DU323RB                  | F1     | 17.50 | 445  | 8.50  | 216 | 10.50 | 267 | 6.50 | 165 |
| DU324                    | F1     | 29.00 | 737  | 17.25 | 438 | 19.00 | 483 | 8.25 | 210 |
| DU324RB                  | F1     | 29.25 | 743  | 17.25 | 438 | 19.00 | 483 | 8.25 | 210 |
| DU325 <sub>32</sub>      | E3     | 45.12 | 1146 | 24.00 | 610 | 24.88 | 632 | 8.88 | 226 |
| DU326 <sub>32</sub>      | E3     | 49.13 | 1248 | 24.00 | 610 | 24.88 | 632 | 8.88 | 226 |
| QO200TR <sub>32</sub>    | G3     | 6.50  | 165  | 4.63  | 118 | —     | —   | 3.88 | 99  |
| QO260-NATS <sub>32</sub> | E2     | 9.25  | 235  | 4.88  | 124 | —     | —   | 3.25 | 83  |
| QO2000NR-B <sub>32</sub> | E1     | 14.00 | 356  | 7.75  | 197 | —     | —   | 4.50 | 114 |
| QO2000NS <sub>32</sub>   | E1     | 13.38 | 340  | 6.13  | 156 | —     | —   | 3.50 | 89  |
| T327N <sub>32</sub>      | E1     | 49.13 | 1248 | 24.00 | 610 | 24.88 | 632 | 8.88 | 226 |
| T327NR <sub>32</sub>     | E1     | 49.13 | 1248 | 24.75 | 629 | 25.13 | 638 | 8.88 | 226 |

32. Does not have a cover draw as indicated in above drawing.

# Catalog Number Description

**Table 14 - Heavy Duty Switch Catalog Number Description**

| Number Segment          | Character                                                                                                                                                          | Description                                                                                    | H | 3 | 2 | 1 | N | RB | — |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---|---|---|---|---|----|---|
| Type of Switch          | Fusible                                                                                                                                                            | H = Heavy duty                                                                                 |   |   |   |   |   |    |   |
|                         | Non-Fusible                                                                                                                                                        | HU = Heavy duty                                                                                |   |   |   |   |   |    |   |
| Blades – Switched Poles | 2                                                                                                                                                                  | Two-poles                                                                                      |   |   |   |   |   |    |   |
|                         | 3                                                                                                                                                                  | Three-poles                                                                                    |   |   |   |   |   |    |   |
|                         | 4                                                                                                                                                                  | Four-poles                                                                                     |   |   |   |   |   |    |   |
|                         | 6                                                                                                                                                                  | Six-poles                                                                                      |   |   |   |   |   |    |   |
| Voltage Rating          | 2                                                                                                                                                                  | 240 Vac / 250 Vdc Maximum                                                                      |   |   |   |   |   |    |   |
|                         | 6                                                                                                                                                                  | 600 Vac / 600 Vdc Maximum                                                                      |   |   |   |   |   |    |   |
| Ampere Rating           | 1                                                                                                                                                                  | 30 A                                                                                           |   |   |   |   |   |    |   |
|                         | 2                                                                                                                                                                  | 60 A                                                                                           |   |   |   |   |   |    |   |
|                         | 3                                                                                                                                                                  | 100 A                                                                                          |   |   |   |   |   |    |   |
|                         | 4                                                                                                                                                                  | 200 A                                                                                          |   |   |   |   |   |    |   |
|                         | 5                                                                                                                                                                  | 400 A                                                                                          |   |   |   |   |   |    |   |
|                         | 6                                                                                                                                                                  | 600 A                                                                                          |   |   |   |   |   |    |   |
|                         | 7                                                                                                                                                                  | 800 A                                                                                          |   |   |   |   |   |    |   |
|                         | 8                                                                                                                                                                  | 1200 A                                                                                         |   |   |   |   |   |    |   |
| Neutral                 | N                                                                                                                                                                  | Factory-installed neutral (neutrals are field-installable on most heavy duty safety switches). |   |   |   |   |   |    |   |
| Enclosure               | No suffix                                                                                                                                                          | NEMA Type 1                                                                                    |   |   |   |   |   |    |   |
|                         | A                                                                                                                                                                  | NEMA Type 12K                                                                                  |   |   |   |   |   |    |   |
|                         | AWK                                                                                                                                                                | NEMA Type 12 (without Knock Outs)                                                              |   |   |   |   |   |    |   |
|                         | DF                                                                                                                                                                 | NEMA Type 4X Fiberglass Reinforced Polyester                                                   |   |   |   |   |   |    |   |
|                         | DS                                                                                                                                                                 | NEMA Type 4, 4X, and 5 (NEMA Type 304 stainless steel)                                         |   |   |   |   |   |    |   |
|                         | DX                                                                                                                                                                 | NEMA Type 4X Krydon™ Fiberglass Reinforced Polyester                                           |   |   |   |   |   |    |   |
|                         | R                                                                                                                                                                  | NEMA Type 3R                                                                                   |   |   |   |   |   |    |   |
|                         | RB                                                                                                                                                                 | NEMA Type 3R (with bolt-on hub provision)                                                      |   |   |   |   |   |    |   |
|                         | SS                                                                                                                                                                 | NEMA Type 4, 4X, and 5 (NEMA Type 316 stainless steel)                                         |   |   |   |   |   |    |   |
|                         | See<br>NEMA<br>Type 7/9,<br>Three-<br>Pole<br>Molded<br>Case<br>Switch,<br>600 Vac,<br>250 Vdc<br>For<br>switching<br>dc, Short<br>Circuit<br>Current<br>Rating 10 | NEMA Type 7 / 9 (Cast aluminum)                                                                |   |   |   |   |   |    |   |
|                         |                                                                                                                                                                    |                                                                                                |   |   |   |   |   |    |   |

**Table 14 - Heavy Duty Switch Catalog Number Description (Continued)**

| Number Segment        | Character         | Description                                                                                                                                                                                     | H | 3 | 2 | 1 | N | RB | — |
|-----------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|----|---|
| kA AIR, page 27       |                   |                                                                                                                                                                                                 |   |   |   |   |   |    |   |
| Factory Modifications | CLR               | Class R fuse kit (Rejects all but Class R fuses)                                                                                                                                                |   |   |   |   |   |    |   |
|                       | EI or EI2         | Electrical interlock kit (EI = 1 NO / 1 NC contacts. EI2 = 2 NO / 2 NC contacts)                                                                                                                |   |   |   |   |   |    |   |
|                       | GL                | Equipment ground lugs <sup>33</sup>                                                                                                                                                             |   |   |   |   |   |    |   |
|                       | LI, SI, or LI2    | Voltage indicators <sup>34</sup>                                                                                                                                                                |   |   |   |   |   |    |   |
|                       | KI, KI2 or KIKI   | Key interlocks <sup>35</sup>                                                                                                                                                                    |   |   |   |   |   |    |   |
|                       | LK                | Compression lugs (Heavy Duty 800 A and 1200 A only)                                                                                                                                             |   |   |   |   |   |    |   |
|                       | LOG <sup>36</sup> | Lock-Off Guard                                                                                                                                                                                  |   |   |   |   |   |    |   |
|                       | NP                | Phenolic legend plate. Customer must provide legend text.                                                                                                                                       |   |   |   |   |   |    |   |
|                       | PB(xx)            | Push buttons, pilot lights, selector switches. The customer must provide the catalog number of the control device to be installed (contact Schneider Electric for the complete catalog number). |   |   |   |   |   |    |   |
|                       | SLC               | Copper lugs (30–600 A)                                                                                                                                                                          |   |   |   |   |   |    |   |
|                       | SP(xx)            | Special paint colors (For suffix xx see <i>Safety Colors</i> , page 42)                                                                                                                         |   |   |   |   |   |    |   |
|                       | SPLO              | Lock-on provision                                                                                                                                                                               |   |   |   |   |   |    |   |
|                       | VW                | Viewing window                                                                                                                                                                                  |   |   |   |   |   |    |   |
|                       | WA                | Appleton™ interlocked receptacle                                                                                                                                                                |   |   |   |   |   |    |   |
|                       | WC                | Crouse-Hinds Arkite™ interlocked receptacle                                                                                                                                                     |   |   |   |   |   |    |   |
|                       | WH                | Hubbellock™ interlocked receptacle                                                                                                                                                              |   |   |   |   |   |    |   |

33. Equipment Ground Kits (Al/Cu) are factory installed standard in 30–200 A, Series F, NEMA Type 4/4X/5 (stainless steel), 12 and 12K. Equipment Ground Kits are standard on all receptacle switches and Series F, 30–200 A, four- and six-pole switches.

34. 'LI = Load side indicator. SI = Line side indicator. LI2 = Line and load side indicators.

35. KI = 1 lock. KI2 = 1 lock with 2 cylinders. KIKI = 2 locks.

36. Not available for NEMA Type 4X fiberglass, NEMA Type 4/4X/5 stainless steel and NEMA Type 7/9 enclosures.

# Heavy Duty Safety Switches

## Product Description

**Series F**



The Square D™ by Schneider Electric brand Heavy Duty Safety Switch is designed to be tough, reliable and provide exceptional performance in the most grueling conditions; from commercial and institutional to industrial and manufacturing facilities. F Series safety switches provide significantly higher levels of mechanical endurance than NEMA Type KS-1 or UL98 standards require. The design life of a F-Series switch is a minimum of three times the NEMA requirement.

An abundance of copper is used in the heaviest current carrying power paths of all Square D by Schneider Electric Heavy Duty Safety Switches. The more copper for current carrying paths, the lower the temperature rise. Managing temperatures inside the switch is the key to providing greater service life.

All heavy duty safety switches feature a quick-make, quick-break operating mechanism, a dual cover interlock and a color-coded indicator handle.

## Applications

Heavy duty safety switches are designed for the following applications:

- Commercial and industrial installations
- Up to 600 Vac or 600 Vdc maximum
- Up to 200,000 rms symmetrical amperes short circuit current
- 30–1200 A
- Horsepower ratings
- Load-make, load-break rated for the switch current rating
- Seismically Qualified to the:
  - 2010 ASCE 7
  - 2012 International Building Code (IBC)
  - 2013 California Building Code (CBC)
  - State of California's Office of Statewide Health Planning and

## Standards

**Visible Blades**



Heavy duty safety switches are manufactured in accordance with these standards:

- UL98, Standard for enclosed and dead front switches. UL Listed;
  - 30–200 A, see file E2875
  - 400–1200 A, see file E154828
- NEMA Standards Publication KS1 and KS2 enclosed switches
- Federal Specifications WS-865C for Type HD

## Configuration

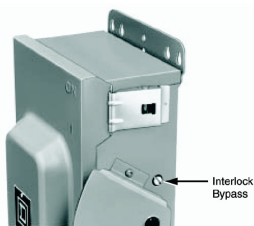
### Operating Mechanism Series F



- Two- or three-, fusible switched poles-, with or without, insulated groundable solid neutral
- Four- or six-, fusible switched poles-, without insulated, grounded, solid neutral
- Two-, three-, four-, or six-, non-fusible switched poles-, without insulated, grounded, solid neutral
- Three, fusible switched poles-, without insulated, grounded, solid neutral, interlocked to Appleton™, Crouse-Hinds™, or Hubbellock™ receptacle
- Three, non-fusible switched poles, without insulated, grounded, solid neutral-, interlocked to Appleton, Crouse-Hinds, or Hubbellock receptacle

## Construction

### Mechanical Lugs

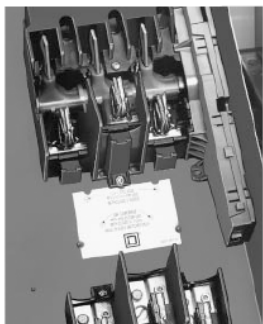


- Visible blades for positive blade position indication
- Optional viewing window allows visual verification of blade position without opening door; not available on NEMA Type 4X fiberglass reinforced polyester enclosures or NEMA Type 7/9 enclosures
- Red and black handle indicates the ON (red) or OFF (black) switch position - except NEMA Type 7/9 enclosures
- Series F handle, mechanism and lock plate are field replaceable
- Side-opening, left hinged covers
- Highly visible embossed ON-OFF marking / ON-OFF labels are used on NEMA Type 4X fiberglass reinforced polyester enclosures
- Quick-make, quick-break, operating mechanism
- Standard with plated aluminum lugs which accept both Cu and Al wires
- Front removable mechanical lugs
- Dual cover interlock prevents the cover from being opened when the switch is ON and prevents the switch from being turned ON when the cover is open
- An interlock bypass is provided for access by authorized personnel

### Fuse Pullers

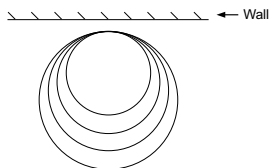


### Class J Fuse Provisions Alternate mounting holes make for easy conversion to Class J fuses



- Factory installed fuse pullers are standard on 30–100 A, NEMA Type 4/4X/5 stainless steel, NEMA Type 4X fiberglass reinforced polyester and NEMA Type 12 or 12K switches; Available as a kit for field installation on 30–100 A, F Series switches, NEMA Type 1 and 3R switches
- 30–600 A switches are shipped with standard Class H fuse spacing. These switches will accept Class R fuses also; A field-installed rejection kit is available, which when installed, rejects all but Class R fuses;
- See Class R Fuse Kits, page 35
- Fuse load base(s) can be repositioned to accept Class J fuses on
- 30–600 A, 600 V switches and 100–600 A, 240 V switches;
- 600 A switches also require a mounting kit (catalog number H600J)
- Multiple padlock provision in OFF position (three 3/16-5/16 in. (4-7 mm) shank padlocks)
- Provisions to lock ON with one 3/8 in. (9 mm) padlock available factory installed, except for NEMA Type 7/9 and NEMA Type 4X fiberglass reinforced polyester switches
- Tangential knockouts, where provided, lessen the need for conduit offset bends
- Lock-OFF provision is standard on all heavy duty safety switches

### Tangential Knockouts



## Enclosures

**NEMA Type 1**



**NEMA Type 3R**



**NEMA Type 4/4X/5 Stainless Steel**



**NEMA Type 12**



**NEMA Type 4X Fiberglass Reinforced Polyester**



**NEMA Type 7/9**



- NEMA Type 1 general purpose, indoor (ANSI-49 grey paint on cold rolled steel)
  - Knockouts standard on 30–200 A enclosures; top, bottom and sidewalls
- NEMA Type 3R rainproof, outdoor (ANSI-49 grey paint on galvaneal steel)
  - Knockouts standard on 30–200 A enclosures; bottom and sidewalls
- NEMA Type 4/4X/5 indoor or outdoor, watertight, dust-tight, and corrosion-resistant (NEMA Type 304 or NEMA Type 316 stainless steel)
- NEMA Type 4X indoor or outdoor, watertight and dust-tight, and corrosion-resistant (fiberglass reinforced polyester)
- NEMA Type 7/9 hazardous locations as defined in NEC® Article 500 (copper free cast aluminum):
  - Class I, Divisions 1 and 2, Groups C and D
  - Class II, Divisions 1 and 2, Groups E, F and G
  - Class III, Divisions 1 and 2
- NEMA Type 12 and 12K indoor, dust-tight, and drip-tight (ANSI-49 grey paint on galvaneal steel)
  - NEMA Type 12 has no knockouts (also suitable for NEMA Type 3R outdoor use)
  - NEMA Type 12K provided with knockouts 30–200 A enclosures; top, bottom and sidewalls

## Special Application Enclosures

### 316 Grade Stainless Steel

NEMA Type 316 stainless steel enclosure switches offer superior corrosion resistance to a wider range of chemicals than NEMA Type 304 stainless steel switches. NEMA Type 316 offers better resistance to chloride and is often used in marine, waste treatment and transportation applications.

- UL Listed
- Suitable for service entrance equipment
- Requires water tight hubs (see Watertight Hubs, page 31 for water tight hub catalog numbers)
- Standard with equipment grounding lugs (see Equipment Grounding Kits and Terminal Data, page 33 for terminal data)

**Table 15 - 316 Grade Stainless Steel Three-Pole 600 Vac, 600 Vdc**

| Amperes                          | Cat. No. | Horsepower Ratings - 3Ø |      |           |      |         |
|----------------------------------|----------|-------------------------|------|-----------|------|---------|
|                                  |          | 480 Vac                 |      | 600 Vac 1 |      | 600 Vdc |
|                                  |          | Std.                    | Max. | Std.      | Max. | Max.    |
| Fusible—3P, 600 Vac, 600 Vdc     |          |                         |      |           |      |         |
| 30                               | H361SS   | 5                       | 15   | 7-1/2     | 20   | 15      |
| 60                               | H362SS   | 15                      | 30   | 15        | 50   | 30      |
| 100                              | H363SS   | 25                      | 60   | 30        | 75   | 50      |
| 200                              | H364SS   | 50                      | 125  | 60        | 150  | 50      |
| 400                              | H365SS   | 100                     | 250  | 125       | 350  | 50      |
| 600                              | H366SS   | 150                     | 400  | 200       | 500  | 50      |
| Non-Fusible—3P, 600 Vac, 600 Vdc |          |                         |      |           |      |         |
| 30                               | HU361SS  | —                       | 20   | —         | 30   | 15      |
| 60                               | HU362SS  | —                       | 50   | —         | 60   | 30      |
| 100                              | HU363SS  | —                       | 75   | —         | 100  | 50      |
| 200                              | HU364SS  | —                       | 125  | —         | 150  | 50      |
| 400                              | HU365SS  | —                       | 250  | —         | 350  | 50      |
| 600                              | HU366SS  | —                       | 400  | —         | 500  | 50      |

## Fiberglass Reinforced Polyester Enclosures—NEMA Type 4X

H363DF



Fiberglass reinforced polyester enclosures are watertight, corrosion resistant and impervious to windblown dust, rain, and splashing liquid. The molded fiberglass is extremely stable in a wide range of operating temperatures and can withstand heavy impact.

- UL Listed and CSA Certified
- Suitable for service entrance equipment (USA only)
- Standard with water tight hubs provided
- Standard with equipment grounding lugs installed (see Equipment Grounding Kits and Terminal Data, page 33 for terminal data)

**Table 16 - Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc**

| Am-peres                        | Cat. No. | Solid Neutral Assembly Kit | Class R Fuse Kits | Electrical Interlock Kits Field Installed Cat. No. |                  | Horsepower Ratings—3Ø |       |                       |      |                       | Hubs <sup>37</sup> |    |
|---------------------------------|----------|----------------------------|-------------------|----------------------------------------------------|------------------|-----------------------|-------|-----------------------|------|-----------------------|--------------------|----|
|                                 |          |                            |                   | 1NO/1NC Contacts                                   | 2NO/2NC Contacts | 480 Vac <sup>38</sup> |       | 600 Vac <sup>38</sup> |      | 600 Vdc <sup>39</sup> |                    |    |
|                                 |          |                            | Cat. No.          |                                                    |                  | Std.                  | Ma-x. | Std.                  | Max. | Max.                  | in.                | mm |
| Fusible—3P, 600 Vac 600 Vdc     |          |                            |                   |                                                    |                  |                       |       |                       |      |                       |                    |    |
| 30                              | H361DF   | SN03                       | RFK06             | 9999TC10                                           | 9999TC20         | 5                     | 15    | 7–1/2                 | 20   | 15                    | 3/4                | 19 |
| 60                              | H362DF   | SN03                       | RFK06H            | 9999TC10                                           | 9999TC20         | 15                    | 30    | 15                    | 50   | 30                    | 1–1/4              | 31 |
| 100                             | H363DF   | SN0610                     | RFK10             | 9999TC10                                           | 9999TC20         | 25                    | 60    | 30                    | 75   | 50                    | 2                  | 50 |
| 200                             | H364DF   | —                          | HRK1020           | 9999R8                                             | 9999R9           | 50                    | 125   | 60                    | 150  | 50                    | 2–1/2              | 63 |
| Non-Fusible—3P, 600 Vac 600 Vdc |          |                            |                   |                                                    |                  |                       |       |                       |      |                       |                    |    |
| 30                              | HU361DF  | SN03                       | —                 | 9999TC10                                           | 9999TC20         | —                     | 20    | —                     | 30   | 15                    | 3/4                | 19 |
| 60                              | HU362DF  | SN03                       | —                 | 9999TC10                                           | 9999TC20         | —                     | 50    | —                     | 60   | 30                    | 1–1/4              | 31 |
| 100                             | HU363DF  | SN0610                     | —                 | 9999TC10                                           | 9999TC20         | —                     | 75    | —                     | 75   | 50                    | 2                  | 50 |
| 200                             | HU364DF  | —                          | —                 | 9999R8                                             | 9999R9           | —                     | 125   | —                     | 150  | 50                    | 2–1/2              | 63 |

**Table 17 - Fiberglass Reinforced Polyester 600 Vac Short Circuit Current Rating**

| Catalog Number | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker | 25 kAIR Circuit Breaker |
|----------------|---------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| H361DF         | H, K          | —                     | J, R           | —                       | —                       | —                       |
| H362DF         | H, K          | —                     | J, R           | —                       | —                       | —                       |
| H363DF         | H, K          | —                     | J, R           | —                       | —                       | —                       |
| H364DF         | H, K          | —                     | J, R           | —                       | —                       | —                       |
| HU361DF        | H, K          | J, R, T <sup>40</sup> | J, R, T        | FA                      | FH                      | —                       |
| HU362DF        | H, K          | J, R, T <sup>41</sup> | J, R, T        | FA                      | FH                      | —                       |

37. Two hubs and hub drilling template are provided for field installation.

38. Std.—Using fast acting one time fuses. Max.—Using dual element time delay fuses.

39. For switching dc, use two outside switching poles.

40. SCCR 100 kAIR when protected by R, J or T fuses rated 60 A maximum.

41. SCCR 100 kAIR when protected by R, J or T fuses rated 100 A maximum.

Table 17 - Fiberglass Reinforced Polyester 600 Vac Short Circuit Current Rating (Continued)

| Catalog Number | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker | 25 kAIR Circuit Breaker |
|----------------|---------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| HU363DF        | H, K          | J, R, T <sup>42</sup> | J, R, T        | FA                      | FH                      | —                       |
| HU364DF        | H, K          | J, R, T <sup>43</sup> | J, R, T        | —                       | —                       | LH                      |

## Krydon™ Enclosures—NEMA Type 4X

H361DX



Krydon enclosures are compression molded of fiberglass reinforced polyester, specially formulated to withstand attack from almost any corrosive atmosphere found in the toughest industrial application.

- UL Listed
- Suitable for use as service equipment
- Standard with water tight hubs provided
- Standard with equipment grounding lugs installed (see Equipment Grounding Kits and Terminal Data, page 33 for terminal data)

Table 18 - Krydon Enclosures—NEMA Type 4X Three-Pole 600 Vac, 600 Vdc

| Am-peres                        | Cat. No. | Solid Neutral Assembly Kit | Class R Fuse Kits | Electrical Interlock Kits Field Installed Cat. No. |                  | Horsepower Ratings—3Ø |      |           |      |         | Hubs  |    |
|---------------------------------|----------|----------------------------|-------------------|----------------------------------------------------|------------------|-----------------------|------|-----------|------|---------|-------|----|
|                                 |          |                            |                   | 1NO/1NC Contacts                                   | 2NO/2NC Contacts | 480 Vac               |      | 600 Vac 2 |      | 600 Vdc |       |    |
|                                 |          |                            | Cat. No.          |                                                    |                  | Std.                  | Max. | Std.      | Max. | Max.    | in.   | mm |
| Fusible—3P, 600 Vac 600 Vdc     |          |                            |                   |                                                    |                  |                       |      |           |      |         |       |    |
| 30                              | H361DX   | H60SN                      | RFK06             | 9999TC10                                           | 9999TC20         | 5                     | 15   | 7–1/2     | 20   | 15      | 3/4   | 19 |
| 60                              | H362DX   | H60SN                      | RFK06             | 9999TC10                                           | 9999TC20         | 15                    | 30   | 15        | 50   | 30      | 1–1/4 | 31 |
| 100                             | H363DX   | SN0610                     | RFK10             | 9999TC10                                           | 9999TC20         | 25                    | 60   | 30        | 75   | 50      | 2     | 50 |
| Non-Fusible—3P, 600 Vac 600 Vdc |          |                            |                   |                                                    |                  |                       |      |           |      |         |       |    |
| 30                              | HU361DX  | H60SN                      | —                 | 9999TC10                                           | 9999TC20         | —                     | 20   | —         | 30   | 15      | 3/4   | 19 |
| 60                              | HU362DX  | H60SN                      | —                 | 9999TC10                                           | 9999TC20         | —                     | 50   | —         | 60   | 30      | 1–1/4 | 31 |
| 100                             | HU363DX  | SN0610                     | —                 | 9999TC10                                           | 9999TC20         | —                     | 75   | —         | 75   | 50      | 2     | 50 |

Table 19 - Krydon 600 Vac Short Circuit Current Rating

| Catalog Number | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker |
|----------------|---------------|-----------------------|----------------|-------------------------|-------------------------|
| H361DX         | H, K          | —                     | J, R           | —                       | —                       |
| H362DX         | H, K          | —                     | J, R           | —                       | —                       |
| H363DX         | H, K          | —                     | J, R           | —                       | —                       |
| HU361DX        | H, K          | J, R, T <sup>44</sup> | J, R, T        | FA                      | FH                      |

42. SCCR 100 kAIR when protected by R, J or T fuses rated 200 A maximum.

43. SCCR 100 kAIR when protected by R, J or T fuses rated 400 A maximum.

44. SCCR 100 kAIR when protected by R, J or T fuses rated 60 A maximum.

**Table 19 - Krydon 600 Vac Short Circuit Current Rating (Continued)**

| Catalog Number | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker |
|----------------|---------------|-----------------------|----------------|-------------------------|-------------------------|
| HU362DX        | H, K          | J, R, T <sup>45</sup> | J, R, T        | FA                      | FH                      |
| HU363DX        | H, K          | J, R, T <sup>46</sup> | J, R, T        | FA                      | FH                      |

## NEMA Type 7/9

**H60XBD**

An enclosed automatic molded case switch for use in divisions 1 and 2 of the following: Class I, Group C and D; Class II, Groups E, F and G; or Class III, Hazardous Locations as defined in the NEC Article 500.

- cULus Listed
- Suitable for use as service equipment
- “Raintight” for outdoor applications
- Standard with threaded conduit opening in both top and bottom endwall
- Standard with equipment grounding lugs installed (see Equipment Grounding Kits and Terminal Data, page 33 for terminal data)

**Table 20 - NEMA Type 7/9, Three-Pole Molded Case Switch, 600 Vac, 250 Vdc For switching dc, Short Circuit Current Rating 10 kA AIR**

| Amperes | Enclosed Molded Case Switch <sup>47</sup> | Solid Neutral Assembly | Horsepower Ratings—3Ø <sup>48</sup> |         |         | Size of Threaded Conduit Openings Provided <sup>49</sup> |    |
|---------|-------------------------------------------|------------------------|-------------------------------------|---------|---------|----------------------------------------------------------|----|
|         | Cat. No.                                  | Cat. No.               | 240 Vac                             | 480 Vac | 600 Vac | in.                                                      | mm |
| 60      | H60XBD                                    | 100SNA                 | 15                                  | 30      | 50      | 3/4                                                      | 19 |
| 60      | H60XBDA <sub>50</sub>                     | 100SNA                 | 15                                  | 30      | 50      | 3/4                                                      | 19 |
| 100     | H100XBD                                   | 100SNA                 | 30                                  | 60      | 75      | 1–1/4                                                    | 31 |
| 100     | H100XBDA <sub>50</sub>                    | 100SNA                 | 30                                  | 60      | 75      | 1–1/4                                                    | 31 |
| 225     | H225XJG <sub>51</sub>                     | 225SNA                 | 60                                  | 125     | 150     | 2–1/2                                                    | 63 |
| 225     | H225XJGA <sub>50 51</sub>                 | 225SNA                 | 60                                  | 125     | 150     | 2–1/2                                                    | 63 |

## Receptacle Switches

Interlocked receptacle switches are furnished with a factory-installed, three-phase, four-wire, Appleton Powertite™, Crouse-Hinds Style 2 Arktite™ or Hubbellock™ receptacle. The fourth wire is connected to the switch equipment grounding terminal and is not a solid neutral termination. Interlocking linkage between the receptacle and switch mechanism prevents insertion or removal of the plug while the switch is in the “ON” position or insertion of any plug other than specified. The interlocking mechanism also prevents the switch from being turned “ON” if a plug has not been fully inserted into the receptacle.

45. SCCR 100 kAIR when protected by R, J or T fuses rated 100 A maximum.

46. SCCR 100 kAIR when protected by R, J or T fuses rated 200 A maximum.

47. Includes PKDB1, breather and drain kit, required for rainproof application.

48. For switching dc, see PowerPacT B or PowerPacT J catalog for Vdc wiring details. Not for use on dc motor applications.

49. Threaded conduit opening provided in top and bottom endwall.

50. Includes 1NO/1NC auxiliary contacts.

51. Not cULus listed due to wire bending space.

## Appleton Powertite™ Receptacle

### H362AWA Interlocked Receptacle Switch with Appleton Powertite Receptacle



- UL Listed and CSA Certified
- Available in 30–100 A, 600 Vac / 250 Vdc, fused or non-fused, NEMA Type 1, NEMA Type 4/4X/5 stainless steel and NEMA Type 12/3R
- Suitable for use as service equipment (USA only)
- Receptacles are epoxy powder coated over copper-free cast aluminum

**Table 21 - Appleton Powertite Receptacle Safety Switch Horsepower Ratings**

| Amperes                         | NEMA Type 1 | NEMA Type 3, 3R, 4, 4X, 5 and 12 304 Stainless Steel | NEMA Type 12 and 3R | Use with Plug <sup>52</sup> | Horsepower Ratings—3Ø |      |                       |      |                       |      |
|---------------------------------|-------------|------------------------------------------------------|---------------------|-----------------------------|-----------------------|------|-----------------------|------|-----------------------|------|
|                                 |             |                                                      |                     |                             | 480 Vac <sup>53</sup> |      | 600 Vac <sup>53</sup> |      | 250 Vdc <sup>54</sup> |      |
|                                 |             | Cat. No.                                             | Cat. No.            | Cat. No.                    | Std.                  | Max. | Std.                  | Max. | Std.                  | Max. |
| Fusible—3P, 600 Vac 250 Vdc     |             |                                                      |                     |                             |                       |      |                       |      |                       |      |
| 30                              | H361WA      | H361DSWA                                             | H361AWA             | ACP3034BC                   | 5                     | 15   | 7–1/2                 | 20   | 5                     | —    |
| 60                              | H362WA      | H362DSWA                                             | H362AWA             | ACP6034BC                   | 15                    | 30   | 15                    | 50   | 10                    | —    |
| 100                             | H363WA      | H363DSWA                                             | H363AWA             | ACP1034CD                   | 25                    | 60   | 30                    | 75   | 20                    | —    |
| Non-Fusible—3P, 600 Vac 250 Vdc |             |                                                      |                     |                             |                       |      |                       |      |                       |      |
| 30                              | HU361WA     | HU361DSWA                                            | HU361AWA            | ACP3034BC                   | —                     | 20   | —                     | 30   | —                     | 5    |
| 60                              | HU362WA     | HU362DSWA                                            | HU362AWA            | ACP6034BC                   | —                     | 50   | —                     | 60   | —                     | 10   |
| 100                             | HU363WA     | HU363DSWA                                            | HU363AWA            | ACP1034CD                   | —                     | 75   | —                     | 100  | —                     | 20   |

**Table 22 - Appleton Powertite 600 Vac Short Circuit Current Rating**

| Amperes                                | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker |
|----------------------------------------|---------------|-----------------------|----------------|-------------------------|-------------------------|
| <b>Fusible—3P, 600 Vac 250 Vdc</b>     |               |                       |                |                         |                         |
| 30                                     | H, K          | —                     | J, R           | —                       | —                       |
| 60                                     | H, K          | —                     | J, R           | —                       | —                       |
| 100                                    | H, K          | —                     | J, R           | —                       | —                       |
| <b>Non-Fusible—3P, 600 Vac 250 Vdc</b> |               |                       |                |                         |                         |
| 30                                     | H, K          | J, R, T <sup>55</sup> | J, R, T        | FA                      | FH                      |
| 60                                     | H, K          | —                     | J, R, T        | FA                      | FH                      |
| 100                                    | H, K          | —                     | J, R, T        | FA                      | FH                      |

52. Receptacle UL listed for use with Appleton™ ACP or CPH plugs; UL Classified for use with Crouse-Hinds APJ Arkite™ plugs. See Appleton Powertite Receptacle, page 28.

53. Std.—Using fast acting one time fuses. Max.—Using dual element time delay fuses.

54. For switching dc, use two outside switching poles.

55. SCCR when using 60 A Max fuse.

## Crouse-Hinds Arktime™ Receptacle

### H362WC Interlocked Receptacle Switch with Crouse-Hinds Arktime Receptacle



- UL Listed
- Available in 30–100 A, 600 Vac / 250 Vdc, fused or non-fused, NEMA Type 1, NEMA Type 4/4X/5 stainless steel and NEMA Type 12/3R
- Suitable for use as service equipment
- Receptacles are cast aluminum and copper free for NEMA Type 1 and NEMA Type 12/3R safety switches.
- Receptacles are epoxy powder coated and copper free cast aluminum for NEMA Type 4/4X/5 stainless steel safety switches.

**Table 23 - Crouse-Hinds Arktime Safety Switch Horsepower Ratings**

| Amperes                         | NEMA Type 1 | NEMA Type 4/4X/5 304 Stainless Steel | NEMA Type 12/3R | Use with Plug | Horsepower Ratings—3Ø |      |                       |      |                       |      |
|---------------------------------|-------------|--------------------------------------|-----------------|---------------|-----------------------|------|-----------------------|------|-----------------------|------|
|                                 | Cat. No.    | Cat. No.                             | Cat. No.        | Cat. No.      | 480 Vac <sup>56</sup> |      | 600 Vac <sup>56</sup> |      | 250 Vdc <sup>57</sup> |      |
|                                 |             |                                      |                 |               | Std.                  | Max. | Std.                  | Max. | Std.                  | Max. |
| Fusible—3P, 600 Vac 250 Vdc     |             |                                      |                 |               |                       |      |                       |      |                       |      |
| 30                              | H361WC      | H361DSWC                             | H361AWC         | APJ3485       | 5                     | 15   | 7–1/2                 | 20   | 5                     | —    |
| 60                              | H362WC      | H362DSWC                             | H362AWC         | APJ6485       | 15                    | 30   | 15                    | 50   | 10                    | —    |
| 100                             | H363WC      | H363DSWC                             | H363AWC         | APJ10487      | 25                    | 60   | 30                    | 75   | 20                    | —    |
| Non-Fusible—3P, 600 Vac 250 Vdc |             |                                      |                 |               |                       |      |                       |      |                       |      |
| 30                              | HU361WC     | HU361DSWC                            | HU361AWC        | APJ3485       | —                     | 20   | —                     | 30   | —                     | 5    |
| 60                              | HU362WC     | HU362DSWC                            | HU362AWC        | APJ6485       | —                     | 50   | —                     | 60   | —                     | 10   |
| 100                             | HU363WC     | HU363DSWC                            | HU363AWC        | APJ10487      | —                     | 60   | —                     | 100  | —                     | 20   |

**Table 24 - Crouse-Hinds 600 Vac Short Circuit Current Rating**

| Amperes                                | 10 kAIR Fuses | 100 kAIR Fuses        | 200 kAIR Fuses | 14 kAIR Circuit Breaker | 18 kAIR Circuit Breaker |
|----------------------------------------|---------------|-----------------------|----------------|-------------------------|-------------------------|
| <b>Fusible—3P, 600 Vac 250 Vdc</b>     |               |                       |                |                         |                         |
| 30                                     | H, K          | —                     | J, R           | —                       | —                       |
| 60                                     | H, K          | —                     | J, R           | —                       | —                       |
| 100                                    | H, K          | —                     | J, R           | —                       | —                       |
| <b>Non-Fusible—3P, 600 Vac 250 Vdc</b> |               |                       |                |                         |                         |
| 30                                     | H, K          | J, R, T <sup>58</sup> | J, R, T        | FA                      | FH                      |
| 60                                     | H, K          | —                     | J, R, T        | FA                      | FH                      |
| 100                                    | H, K          | —                     | J, R, T        | FA                      | FH                      |

56. Std—Using fast acting one time fuses. Max.—Using dual element time delay fuses.

57. For switching dc, use two outside switching poles.

58. SCCR when using 60 A Max fuse.

## Hubbellock™ Receptacle

### H362AWH Interlocked Receptacle Switch with Hubbellock Receptacle



- UL Listed
- Available in 30–100 A, 600 Vac / 250 Vdc, fused or non-fused, NEMA Type 1, NEMA Type 4/4X/5 stainless steel and NEMA Type 12/3R
- Suitable for use as service equipment
- Receptacles are zinc plated steel for NEMA Type 1 and NEMA Type 12 safety switches
- Short Circuit Current Rating for fusible switches is 10 kAIR maximum when used with Class H, K, J or R fuses
- Short Circuit Current Rating for non-fusible switches is 10 kAIR maximum when protected by Class H, K, J, R or T fuses

**Table 25 - Hubbellock Receptacle Safety Switch Horsepower Ratings**

| Amperes                 | NEMA Type 1 | NEMA Type 12 | Use with Plug <sup>59</sup> | Horsepower Ratings—3Ø |      |                       |      |
|-------------------------|-------------|--------------|-----------------------------|-----------------------|------|-----------------------|------|
|                         | Cat. No.    | Cat. No.     | Cat. No.                    | 480 Vac <sup>60</sup> |      | 600 Vac <sup>60</sup> |      |
|                         |             |              |                             | Std.                  | Max. | Std.                  | Max. |
| Fusible—3P, 600 Vac     |             |              |                             |                       |      |                       |      |
| 60                      | H362WH      | H362AWH      | SD12781                     | 15                    | 30   | 15                    | 50   |
| Non-Fusible—3P, 600 Vac |             |              |                             |                       |      |                       |      |
| 60                      | HU362WH     | HU362AWH     | SD12781                     | —                     | 50   | —                     | 60   |

59. Hubbell plug is furnished with a Kellems grip for 1-1/2 in. (38 mm) to 1-21/64 in. (33 mm) cable diameter.

60. Std.—Using fast acting one time fuses. Max.—Using dual element time delay fuses.

## Accessories

Square D by Schneider Electric brand heavy duty safety switches are UL Listed for use with the following accessories:

### Rainproof Bolt-On Hubs

#### Rainproof Bolt-On Hubs



Order bolt-on hubs separately from Rainproof Bolt-on, page 31.

- UL Listed for indoor or rainproof applications
- Suitable for use with conduit having ANSI standard taper pipe thread
- NEMA Type 3R enclosures with catalog number ending in RB have a bolt-on closing cap factory installed
  - Accepts 3/4 in. (19 mm) through 2-1/2 in. (63 mm) bolt-on hubs
- Switches with R suffix have blank top endwalls
  - Accepts 3 in. (76 mm) through 4 in. (101 mm) bolt-on hubs
  - Conduit entry holes must be cut in the field

**Table 26 - Rainproof Bolt-on**

| Conduit Size    | 3/4  | 19 | 1    | 25 | 1-1/4 | 31 | 1-1/4 | 38 | 2    | 50 | 2-1/2 | 63 | 3    | 76 | 3-1/2 | 88 | 4    | 101 | Closing Cap |
|-----------------|------|----|------|----|-------|----|-------|----|------|----|-------|----|------|----|-------|----|------|-----|-------------|
|                 | in.  | mm | in.  | mm | in.   | mm | in.   | mm | in.  | mm | in.   | mm | in.  | mm | in.   | mm | in.  | mm  |             |
| Hub Cat. Number | B075 |    | B100 |    | B125  |    | B150  |    | B200 |    | B250  |    | B300 |    | B350  |    | B400 |     | BCA-P       |

### Watertight Hubs

#### Watertight Hubs



- UL Listed for dust tight and watertight applications
- Suitable for use with conduit having ANSI standard taper pipe thread
- Watertight hubs are field installed on NEMA Type 4/4X/5 stainless steel and
- NEMA Type 12/3R and 12K enclosures
- Watertight hubs are available in zinc or chrome plated finish

**Table 27 - Watertight Hubs**

| Conduit Trade Size <sup>61</sup> | 1/2    | 12 | 3/4    | 19 | 1      | 25 | 1-1/4  | 38 | 1-1/2  | 38 | 2      | 50 | 2-1/2 | 63 | 3    | 76 | 3-1/2 | 88 | 4    | 101 |
|----------------------------------|--------|----|--------|----|--------|----|--------|----|--------|----|--------|----|-------|----|------|----|-------|----|------|-----|
|                                  | in.    | mm | in.    | mm | in.    | mm | in.    | mm | in.    | mm | in.    | mm | in.   | mm | in.  | mm | in.   | mm | in.  | mm  |
| Standard Zinc Hub Cat. Number    | H050   |    | H075   |    | H100   |    | H125   |    | H150   |    | H200   |    | H250  |    | H300 |    | H350  |    | H400 |     |
| Chrome Plated Hub Cat. Number    | H050CP |    | H075CP |    | H100CP |    | H125CP |    | H150CP |    | H200CP |    | —     |    | —    |    | —     |    | —    |     |

61. Gaskets are provided.

## Solid Neutral Assemblies HDSS

- Factory or field-installed, insulated, groundable, solid neutral assemblies

**Field-installed  
Insulated, Grounded  
Neutral**



**Table 28 - Solid Neutral Assembly Kits**

| Am-peres <sup>62 63</sup><br>64 65 | Series <sup>66</sup> | Neutral Kit<br>Catalog<br>Number | Terminal Data AWG/kcmil                              | Optional Copper<br>Only Catalog<br>Number | Terminal Data AWG/kcmil                                               |
|------------------------------------|----------------------|----------------------------------|------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|
| 30                                 | F5-F6                | SN03 <sup>67</sup>               | (2) 14-3 Al/Cu plus<br>(1) 14-3 Al/Cu Svc Ground     | SN03C <sup>67</sup>                       | (2) 14-6 Cu plus<br>(1) 14-6 Cu Svc Ground                            |
| 60                                 | F5-F6 (600 V)        | SN0610                           | (2) 14-1/0 Al/Cu plus<br>(2) 14-6 Al/Cu Svc Ground   | SN0610C                                   | (2) 14-1/0 Cu plus<br>(2) 14-6 Cu Svc Ground                          |
|                                    | F5-F6 (240 V)        | SN03                             | (2) 14-3 Al/Cu plus<br>(1) 14-3 Al/Cu Svc Ground     | SN03C                                     | (2) 14-1/0 Cu plus<br>(2) 14-6 Cu Svc Ground                          |
| 100                                | F5-F6                | SN0610                           | (2) 14-1/0 Al/Cu plus<br>(2) 14-6 Al/Cu Svc Ground   | SN0610C                                   | (2) 14-1/0 Cu plus<br>(2) 14-6 Cu Svc Ground                          |
| 200 <sup>68</sup>                  | F5-F6                | SN20A                            | (2) 6-250 Al/Cu plus<br>(1) 14-10 Al/Cu Svc Ground   | SN20C                                     | (2) 6-250 Cu plus<br>(1) 14-1/0 Cu Svc Ground                         |
| 400 and<br>600                     | E4-E5                | H600SN                           | (4) 1-750 Al/Cu plus<br>(1) 4-300 Al/Cu Svc Ground   | H600SNC                                   | (2) 1-600 Cu plus and<br>(2) 4-350 Cu plus<br>(2) 6-250 Cu Svc Ground |
| 800                                | E4                   | H800SNE4                         | (6) 3/0-750 Al/Cu plus<br>(2) 6-350 Al/Cu Svc Ground | —                                         | —                                                                     |
| 1200                               | E4                   | H1200SNE4                        | (8) 3/0-750 Al/Cu plus<br>(2) 6-350 Al/Cu Svc Ground | —                                         | —                                                                     |

62. For series not shown in chart refer to the switch wiring diagram.

63. For Solid Neutral Assembly Kits for Krydon™ enclosures, see Krydon Enclosures—NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 26.

64. For Solid Neutral Assembly Kits for Fiberglass Reinforced Polyester enclosures, see Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25.

65. Neutrals cannot be installed in four- or six-pole switches or receptacle switches.

66. See General Information, page 44 for safety switch series.

67. The following 30 A Series F5-F6 switches use SN0610 or SN0610C: H3612, H3612RB, H3612A, H3612AWK, HU3612, HU3612RB, HU3612A and HU3612AWK.

68. For 200% neutral, order two SN20A Neutral Kits and one SN20NI Neutral Jumper Kit.

## Equipment Grounding Kits

### GTK0610 Field- Installed Equipment Grounding Kit



Equipment grounding kits available for factory or field installation.

- UL Listed
- For factory installation add suffix GL

**Table 29 - Equipment Grounding Kits and Terminal Data**

| Amperes <sup>69 70</sup> | Series <sup>71</sup> | Catalog Number        | Terminal Data AWG/kcmil                                          | Optional Copper Only Catalog Number | Terminal Data AWK/kcmil             |
|--------------------------|----------------------|-----------------------|------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 30                       | F5–F6                | GTK03 <sub>72</sub>   | (2) 14–4 Cu or (2) 12–4 Al<br>or (4) 14–12 Cu or (4) 12–10 Al    | GTK03C <sub>72 73</sub>             | (2) 14–6 Cu                         |
| 60                       | F5–F6 (600 V)        | GTK0610               | (2) 14–1/0 Cu or (2) 12–1/0 Al and<br>(2) 14–6 Cu or (2) 12–6 Al | GTK0610C                            | (2) 14–1/0 Cu<br>and<br>(2) 14–6 Cu |
| 60                       | F5–F6 (240V)         | GTK03                 | (2) 14–4 Cu or (2) 12–4 Al or<br>(4) 14–12 Cu or (4) 12–10 Al    | GTK03C                              | (2) 14–6 Cu                         |
| 100                      | F5–F6                | GTK0610               | (2) 14–1/0 Cu or (2) 12–1/0 Al and<br>(2) 14–6 Cu or (2) 12–6 Al | GTK0610C                            | (2) 14–1/0 Cu<br>and<br>(2) 14–6 Cu |
| 200                      | F5–F6                | PKOGTA2               | (2) 10–2/0 Cu or (2) 6–2/0 Al                                    | PKOGTC2                             | (2) 14–4 Cu                         |
| 400 and 600              | E4–E5                | PKOGTA2 <sub>74</sub> | (2) 10–2/0 Cu or (2) 6–2/0 Al                                    | PKOGTC3                             | (4) 14–1/0 Cu                       |
| 800                      | E4                   | PKOGTA7               | (4) 4–350 Al/Cu                                                  | —                                   | —                                   |
| 1200                     | E4                   | PKOGTA8               | (8) 4–350 Al/Cu                                                  | —                                   | —                                   |

69. For series not shown in chart refer to the switch wiring diagram.

70. Equipment ground kits (Al/Cu) are factory installed standard in 30–200 A Series F NEMA Type 4/4X/5 (stainless steel), 12 and 12K. Equipment ground kits are standard factory installed on all receptacle switches and all enclosure Series F 30–200 A, four- and six-pole switches.

71. See page 57 through page 61 for safety switch series.

72. H2212AWK accepts GTK03 or GTK03C. H3612A or AWK accepts GTK03C. H3612 and H3612RB accepts GTK0610. HU3612AWK accepts GTK03C. HU3612A accepts GTK0610C. HU3612RB accepts GTK0610 or GTK0610C.

73. Optional copper equipment grounding kit for the four- and six-pole 30 A F Series: H461DS, H461AWK, HU461DS, HU661DS and HU661AWK accepts GTK03C. HU461AWK accepts GTK0610C.

74. Two required if equipment grounding conductors are run in parallel.

## Cover Viewing Window

Cover Viewing Window

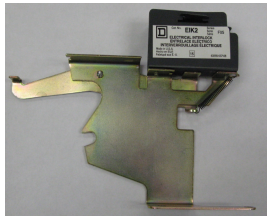


The optional cover viewing window is positioned over the blades to allow visual verification of the ON-OFF status. Available on 30 through 1200 A heavy duty switches.

- UL Listed
- Factory installed only
- Add a VW suffix to the catalog number for factory installation
- Not available on NEMA Type 4X fiberglass reinforced polyester, Krydon™ or NEMA Type 7/9 enclosures

## Electrical Interlock Kits HDSS

EIK2 Electrical Interlock Kit



Electrical interlocks for heavy duty safety switches, 30 through 1200 A, are available factory installed or in kit form for field installation. A pivot arm operates from the switch mechanism, breaking the control circuit before the main switch blades break.

- UL Listed, factory or field installed

Table 30 - Electrical Interlock Kit

| Switch Ampere Rating <sup>75 76</sup> | Series <sup>77</sup> | Catalog Number <sup>78</sup> |
|---------------------------------------|----------------------|------------------------------|
| 30                                    | F5-F6                | EIK031                       |
|                                       |                      | EIK032                       |
| 60 (600 V)                            | F5-F6                | EIK1                         |
|                                       |                      | EIK2                         |
| 60 (240 V)                            | F5-F6                | EIK031                       |
|                                       |                      | EIK032                       |
| 100–200                               | F5-F6                | EIK1                         |
|                                       |                      | EIK2                         |
| 30–100 Receptacle Switches            | F5-F7                | EIK1                         |
|                                       |                      | EIK2                         |
| 30–200 Four- and Six-Pole Switches    | F5-F6                | EIK1                         |
|                                       |                      | EIK2                         |
| 400–1200                              | E4-E5                | EIK40601                     |
|                                       |                      | EIK40602                     |

75. For series not shown in table refer to the switch wiring diagram.

76. Electrical interlocks for NEMA Type 4X fiberglass reinforced polyester and Krydon™, see Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25 and Krydon Enclosures—NEMA Type 4X Three-Pole 600 Vac, 600 Vdc , page 26 respectively.

77. See Equipment Grounding Kits and Terminal Data, page 33 for safety switch series.

78. Electrical interlock kit catalog numbers ending with the number 1, indicates one normally open and one normally closed contact. These kits use a 9007AO1 industrial snap switch. Electrical interlock kit catalog numbers ending with the number 2, indicates two normally open and two normally closed contacts. These kits use a 9007CO3 industrial snap switch.

**Table 31 - Electrical Interlock Contact Ratings**

| Interlock Type <sup>79</sup>       | AC 50 or 60 Hz |        |        |        | DC    |                |        |
|------------------------------------|----------------|--------|--------|--------|-------|----------------|--------|
|                                    | Volts          | Make   | Break  | Cont.  | Volts | Make and Break | Cont.  |
| 1 N.O./1 N.C Contact <sup>80</sup> | 120            | 40.0 A | 15.0 A | 15.0 A | 115   | 0.50 A         | 15.0 A |
|                                    | 240            | 20.0 A | 10.0 A | 15.0 A | 230   | 0.25 A         | 15.0 A |
|                                    | 480            | 10.0 A | 6.0 A  | 15.0 A | —     | —              | —      |
|                                    | 600            | 8.0 A  | 5.0 A  | 15.0 A | 600   | 0.05 A         | 15.0 A |
| 2 N.O./2 N.C Contact <sup>81</sup> | 120            | 30.0 A | 3.0 A  | 10.0 A | 115   | 1.00 A         | 10.0 A |
|                                    | 240            | 15.0 A | 1.5 A  | 10.0 A | 230   | 0.30 A         | 10.0 A |
|                                    | 480            | 7.5 A  | 0.75 A | 10.0 A | —     | —              | —      |
|                                    | 600            | 6.0 A  | 0.60 A | 10.0 A | 600   | 0.10 A         | 10.0 A |

## Class R Fuse Kits

### Class R Fuse Kits



When installed, the Class R Fuse Kit rejects all but Class R fuses.

- UL Listed
- For factory installation, add CLR to the catalog number
- For systems having up to 200,000 rms symmetrical amperes fault current available
- One kit is required for a three-pole switch

**Table 32 - 240 Vac — Class R Fuse Kits**

| Amperes <sup>82</sup> | Series <sup>83</sup> | Class R Fuse Kit Catalog Number |
|-----------------------|----------------------|---------------------------------|
| 30                    | F5–F6                | RFK03L                          |
| 60                    | F5–F6                | RFK03H                          |
| 100                   | F5–F6                | RFK10                           |
| 200                   | F5–F6                | HRK1020                         |
| 400–600               | E4–E5                | HRK4060                         |

**Table 33 - 600 Vac — Class R Fuse Kits**

| Amperes <sup>82,84</sup> | Series <sup>85</sup> | Class R Fuse Kit Catalog Number |
|--------------------------|----------------------|---------------------------------|
| 30 <sup>86</sup>         | F5–F6                | RFK03H                          |
| 30 A Receptacle Switches | F7                   | RFK06                           |
| 30 A Four-Pole Switches  | F5–F6                | RFK06                           |
| 60                       | F5–F7                | RFK06H                          |

79. Single-pole single-throw interlock kits are rated 1/2 hp at 110 and 220 Vac.

80. Catalog numbers ending in 1 use a 9007AO1 limit switch.

81. Catalog numbers ending in 2 use a 9007CO3 limit switch.

82. For series not shown in table refer to the switch wiring diagram.

83. See Equipment Grounding Kits and Terminal Data, page 33 for safety switch series.

84. Class R Fuse Kits for Fiberglass Reinforced Polyester enclosures and Krydon™ enclosures see Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25 and Krydon Enclosures—NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 26 respectively.

85. See General Information, page 44 for safety switch series.

86. H361-2, H361-2A, H361-2AWK and H361-2RB use RFK06.

**Table 33 - 600 Vac — Class R Fuse Kits (Continued)**

| Amperes <sup>87,88</sup> | Series <sup>89</sup> | Class R Fuse Kit Catalog Number |
|--------------------------|----------------------|---------------------------------|
| 100                      | F5–F7                | RFK10                           |
| 200                      | F5–F6                | HRK1020                         |
| 400–600                  | E4–E5                | HRK4060                         |

## Fuse Puller Kits

### Fuse Puller Kits



- Fuse Puller Kits are standard equipment on the following 30–100 A switches:
  - NEMA Type 12 and 12K
  - NEMA Type 4/4X/5 stainless steel
  - NEMA Type 4X fiberglass reinforced polyester, and Krydon™
- Fuse Puller Kit available for field installation on NEMA Type 1 and NEMA Type 3R, 30–100 A switches
  - One Fuse Puller Kit required for a three-pole, fusible, 240 V or 600 V heavy duty switch.
  - Fuse Puller Kits can be field installed on switches manufactured since February, 1980

## Copper Lug Kits

Copper lug kits available for field or factory installation.

- UL Listed
- NEMA Type 12/12K and NEMA Type 4/4X/5 stainless steel switches, UL Marine Listed
  - Available on 30–200 A safety switches
  - Factory installed copper lug kit bear the manifest for use on vessels over sixty-five feet long
  - Field installed copper lug kit do not bear the manifest for use on vessels over sixty-five feet long
- For field installation, order copper lug kits, see [Copper Lug Kit](#) , page 36
- For factory installation of copper lugs add suffix SLC to catalog number

**Table 34 - Copper Lug Kit**

| Amperes <sup>90</sup> | Copper Lug Kit Catalog Number | Lug Wire Range AWG/kcmil                |
|-----------------------|-------------------------------|-----------------------------------------|
| 30–60                 | CL0306F                       | (1) 14–8 Cu solid or 14–4 Cu stranded   |
| 100                   | CL10F                         | (1) 14–8 Cu solid or 14–1/0 Cu stranded |

87. For series not shown in table refer to the switch wiring diagram.

88. Class R Fuse Kits for Fiberglass Reinforced Polyester enclosures and Krydon™ enclosures see [Fiberglass Reinforced Polyester Enclosures](#) NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25 and [Krydon Enclosures—NEMA Type 4X Three-Pole 600 Vac, 600 Vdc](#) , page 26 respectively.

89. See [General Information](#), page 44 for safety switch series.

90. One kit includes all phase line/load lugs for a three-pole switch. CL0306F, CL10F and CL20F includes six lugs. CL40F and CL60F includes twelve lugs.

**Table 34 - Copper Lug Kit (Continued)**

| Amperes <sup>91</sup> | Copper Lug Kit Catalog Number | Lug Wire Range AWG/kcmil       |
|-----------------------|-------------------------------|--------------------------------|
| 200                   | CL20F                         | (1) 6–250 Cu                   |
| 400                   | CL40F                         | (1) 1–600 Cu plus (1) 6–250 Cu |
| 600                   | CL60F                         | (2) 4–350 Cu                   |
| 800                   | —                             | —                              |
| 1200                  | —                             | —                              |

## Double Lug Kits

200 A heavy duty F-series switches are supplied standard with lugs suitable for one wire per phase. For two wires per phase and neutral, order the Double Lug Kit.

**Table 35 - Double Lug Kits**

| Amperes | Catalog Number <sup>92</sup> | Lug Wire Range per Phase and Neutral AWG/kcmil | Wire Range Wire Bending Space per NEC Table 312.6 AWG/kcmil |
|---------|------------------------------|------------------------------------------------|-------------------------------------------------------------|
| 200     | AL20DTF                      | (2) 6–300 Cu/Al                                | (2) 6–250 Cu/Al                                             |

91. One kit includes all phase line/load lugs for a three-pole switch. CL0306F, CL10F and CL20F includes six lugs. CL40F and CL60F includes twelve lugs.

92. Kit contains 3 lugs. Order two kits for line and load lugs.

## Compression Lug Kits: 800 A and 1200 A Safety Switches

- UL Listed
- Compression Lug Kits available for field installation
- Compression Lug Kits available for factory installation; Add suffix LK to standard catalog number
- Compression Lug Kits contain VCEL07512H1 Versa-Crimp™ Compression Lugs
- Order one Compression Lug Kit per switching pole and/or neutral, see Compression Lug Kits, page 38

**Table 36 - Compression Lug Kits**

| Amperes | Catalog Number | Conductors Per Phase  | Lug Wire Range AWG/kcmil             |
|---------|----------------|-----------------------|--------------------------------------|
| 800     | H8LKE2         | (3) Line and (3) Load | 500–750 kcmil (Al) or 500 kcmil (CU) |
| 1200    | H12LKE2        | (4) Line and (4) Load | 500–750 kcmil (Al) or 500 kcmil (CU) |

## Key Interlock System

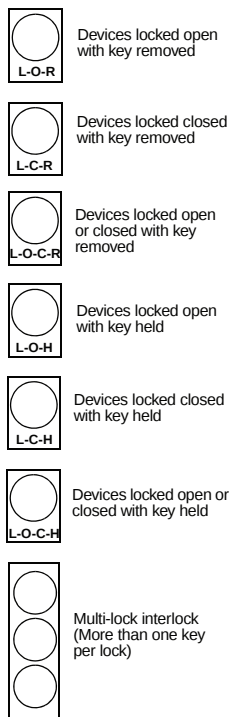


Interlocks are used to prevent the operator from making an unauthorized operation. The key interlock system is a simple and easy method to ensure require operation in a predetermined sequence.

- UL Listed
- Factory installed on heavy duty and double throw safety switches:
  - Not available on hazardous location devices (NEMA Type 7 and 9)
  - Not available on fiberglass reinforced polyester (NEMA Type 4X)
- Add suffixes on switch catalog numbers as noted below:
  - KI = 1 lock per switch
  - KI2 = 1 lock with 2 cylinders per switch
  - KIKI = 2 separate locks per switch

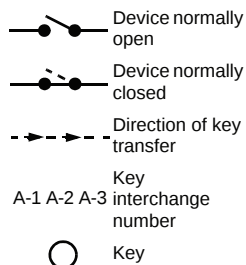
## Sample Applications

### Locking Position—Designations



### Diagram Symbols

**NOTE:** Device locked open = switch in OFF (O) position. Device locked closed = switch in ON (I) position.



### 1. To prevent two devices from being closed simultaneously:

Figure 1 - Sample Application

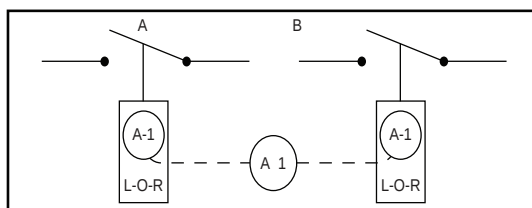


Figure 1 shows two devices that are not to be closed at the same time. Using key interlocks shown, only one key is required to operate the system

- Both devices are shown open, therefore, the key is free
- To close any one device insert the key and turn that particular lock
- The key is held in this lock until the device is locked open
- The procedure described above is the same for two devices, neither of which is to be opened simultaneously

### 2. To prevent the opening of switch A when circuit breaker B is closed:

Figure 2 - Sample Application

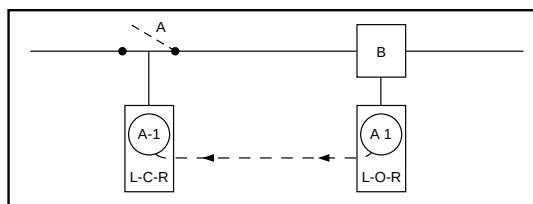
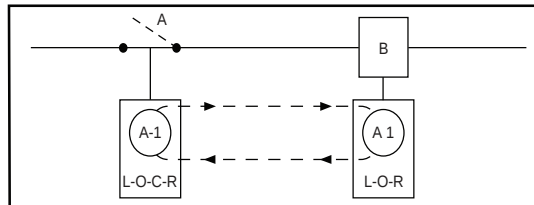


Figure 2 shows switch A and circuit breaker B in the closed position.

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

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

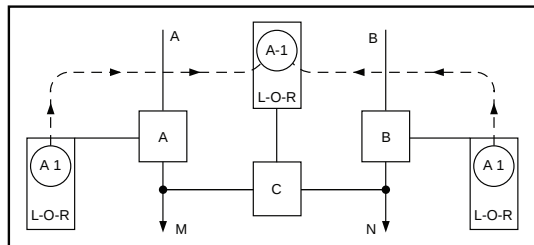
**Figure 3 - Sample Application**



Switch A and circuit breaker B are in the closed position.

- Key A-1 is held in the circuit breaker interlock
  - Open the circuit breaker
  - Turn key A-1 in the L-O-R interlock on circuit breaker B to lock open; Key A-1 is now free
  - Insert key A-1 in the L-O-C-R interlock on switch A and turn to unlock
  - Open switch A; Key A-1 is now held
  - Turn key A-1 in the L-O-C-R interlock on switch A to lock open; Key A-1 is now free
  - Return key A-1 to circuit breaker interlock and unlock for operating during servicing period
  - Reverse the sequence to restore service
4. **To prevent paralleling of lines A and B; two loads, fed from either source (Main-Tie-Main):**

**Figure 4 - Sample Application**



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:

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

## Lock-Off Guard Kits

**Optional Lock-Off Guard Kit Installed**



- UL Component Recognized; Marked **cULus**
- Lock-Off Guard Kits are available for field installation, see Lock-Off Guard Kits, page 41
- Lock-Off Guard Kits are available factory installed by adding LOG suffix to switch catalog number
- Lock-Off Guard Kits cover the lockout/tagout opening when switch is in the ON position
- Lock-Off Guard Kits are designed to help prevent accidental misapplication of a lockout/tagout device

**Table 37 - Lock-Off Guard Kits**

| Switch RatingNot available for NEMA Type 4X fiberglass, Krydon, NEMA Type 4/4X/5 stainless steel and NEMA Type 7/9 switches. | Catalog Number |
|------------------------------------------------------------------------------------------------------------------------------|----------------|
| 30 A                                                                                                                         | LOGK1          |
| 60 A 240 V                                                                                                                   |                |
| 60 A 600 V                                                                                                                   | LOGK2          |
| 100 and 200 A                                                                                                                |                |

## Lock-ON Provisions

### UL Listed

- Lock-ON Provisions allow the switch to be locked in the “ON” position
- Lock-ON Provisions are factory installed only by adding suffix SPLO
- Lock-ON Provisions accept one 3/8 in. (9 mm) hasp padlock
- Lock-ON Provisions are available factory installed on 30–1200 A, NEMA Type 1, 3R, 4/4X/5 stainless steel, 12 and 12K switches

## Internal Barrier Kits

**Internal Barrier**



- UL Component Recognized; Marked **cULus**
- Internal Barrier Kits are field installed only
- Internal Barrier Kits provide IEC529 IP2X “finger safe” protection when door of enclosed disconnect switch is open
- Internal Barrier Kits are transparent; allows visual inspection of the switch
- Internal Barrier Kits’ convenient door allows:
  - Use of test probes without accessing fuses
  - Replacement of fuses without removing barrier
- Internal Barrier Kits helps prevent accidental contact with live parts

**Table 38 - Internal Barrier Kits**

| Catalog Number          | Description                                                           | Safety Switch Application (F Series Only) |
|-------------------------|-----------------------------------------------------------------------|-------------------------------------------|
| SS03                    | Interior Barrier for 30 A and 240 V, 60 A Safety Switch <sup>93</sup> | 240 / 600 Vac, 30 A<br>240 Vac, 60 A      |
| SS06                    | Interior Barrier for 600 V, 60 A Safety Switch                        | 600 Vac, 60 A                             |
| SS10                    | Interior Barrier for 240/600 V, 100 A Safety Switch                   | 240 / 600 Vac, 100 A                      |
| SS20                    | Interior Barrier for 240/600 V, 200 A Safety Switch                   | 240 / 600 Vac, 200 A                      |
| SS4060LI                | Barrier Line Side 600 V, 400–600 A HDSS                               | 600 Vac, 400–600 A                        |
| SS4060LO <sup>94</sup>  | Barrier Load Side 600 V, 400–600 A HDSS                               |                                           |
| SS80120LI               | Barrier Line Side 600 V, 800–1200 A HDSS                              | 600 Vac, 800–1200 A                       |
| SS80120LO <sup>95</sup> | Barrier Load Side 600 V, 800–1200 A HDSS                              |                                           |

## Special Paint

- UL Listed
- Special Paints comply with OSHA Standard 1910.144 and ANSI Specification Z535.1 for marking physical hazards
- Special Paints are powder coated
- Available on NEMA Type 1, 3R, 12 and 12K enclosures only
- To order Special Paint add suffixes as noted in Table 40 to the standard switch catalog number
  - Minimum order quantity 10 units
- UL Listed heavy duty switches are available painted with special safety colors

**Table 39 - Safety Colors**

| Safety Color <sup>96</sup> | Suffix            |
|----------------------------|-------------------|
| Black                      | SP0               |
| Red                        | SP2               |
| Orange                     | SP3               |
| Yellow                     | SP4               |
| Green                      | SP5               |
| Blue                       | SP6               |
| Purple                     | SP7               |
| Gray                       | SP8 <sup>97</sup> |
| Gray ANSI 61               | SP861             |
| White                      | SP9               |

93. Requires arc shield on 240 V switches be changed to 600 V arc suppressor. Contact the Customer Care Center 888-778-2733 for the arc suppressor part number.

94. The SS4060LO Internal Barrier Kit requires the SS4060LI be installed.

95. The SS80120LO Internal barrier Kit requires the SS80120LI be installed.

96. A minimum quantity of ten is required.

97. Standard Square D ANSI 49 gray paint, when selecting the suffix SP8, switches will receive an additional coat of paint.

## Voltage Monitors

Voltage-indicating safety switches indicate when voltage is present, helping to prevent arc-flash hazards and electric shocks during maintenance work. Voltage-indicating safety switches can be combined with other safety features such as key interlock, viewing windows and lock on provisions.

- UL Listed
- Factory-installed only
- Order the indicators by adding the appropriate suffix shown in Table 41 to the switch catalog number
- Not available on NEMA Type 7 and 9 and NEMA Type 4 X, Fiberglass and Krydon™ Enclosures
- Not available on two- and three-pole, 200 A, NEMA Type 3R, double throw safety switches

See Fusible Safety Switches, page 44.

**Table 40 - Voltage Indicators**

| Suffix <sup>98</sup> <sup>99</sup> | Description                  |
|------------------------------------|------------------------------|
| SI                                 | Line Side Indicator          |
| LI                                 | Load Side Indicator          |
| LI2                                | Line and Load Side Indicator |

## Phenolic Legend Plate

Available engraved and mounted on all heavy duty safety switches, except NEMA Type 7 and 9. Legend engraved in 1/4 in. (6 mm) high white letters on black background.

- UL Listed
- Customer to provide legend
- To order, add suffix NP to standard Cat. No.
  - Example: H363NP

## Switch Lubricant

- Field maintenance lubricant is available for servicing blade and jaw components in switches 600 V and below
- Catalog number SWLUB consists of one tube of BG20 High Performance Synthetic Grease manufactured by Dow Corning®
- SWLUB is available in warehouse stock, shipped individually or in multiples of 12 units per carton

98. Available on 30–1200 A Heavy Duty Safety Switches and 30–400 A Double Throw Safety Switches. For NEMA Type 1 or 3R, 30 A or 60 A fusible switches only, order an equivalent 30 A or 60 A fusible.

99. NEMA Type 12/3R (Suffix AWK) switch. In addition to the suffix in Voltage Indicators, page 43, a “3” must be added to the switch catalog number for all 30 A and 60 A switches, i.e. H361AWK becomes H3613AWKLI. The 30 A and 60 A switches will be provided in 100 A enclosures.

## General Information

### UL Listed Maximum Short Circuit Current Ratings

**NOTE:** Consult the wiring diagram of the switch to verify the UL Listed short circuit current rating.

### Fusible Safety Switches

**Table 41 - Fusible Safety Switches**

| Heavy Duty Safety Switch Type | UL Listed Fuse Class | UL Listed Short Circuit Current Ratings |
|-------------------------------|----------------------|-----------------------------------------|
| Fusible                       | H, K                 | 10 kA                                   |
|                               | R, J, L              | 200 kA <sup>100</sup>                   |

### Non-Fusible Safety Switches

- **Systems equal or less than 10 kAIR SCCR;** Any brand of circuit breaker or fuse not exceeding the ampere rating of the switch may be used in conjunction with a non-fusible safety switch, see [Non-Fusible Safety Switches, page 44](#)
- **Systems above 10 kAIR SCCR;** The UL Listed short circuit current rating for Square D non-fusible switches is based upon the switch being used in conjunction with fuses or Square D circuit breakers or Mag-Gard motor circuit protectors, see [Non-Fusible Safety Switches, page 44](#).

**Table 42 - Non-Fusible Safety Switches**

| Switch Rating (A) <sup>101</sup><br><sup>102</sup> | Fuse Class or<br>Circuit Breaker<br>Type <sup>103</sup> | 3-Phase |         |         | 250 Vdc / 600 Vdc |
|----------------------------------------------------|---------------------------------------------------------|---------|---------|---------|-------------------|
|                                                    |                                                         | 240 Vac | 480 Vac | 600 Vac |                   |
| With Upstream Fuse Protection                      |                                                         |         |         |         |                   |
| All                                                | H, K                                                    | 10 kA   | 10 kA   | 10 kA   | Up to 10 kA       |
|                                                    | R,T,J,L                                                 | 200 kA  | 200 kA  | 200 kA  |                   |
| With Upstream Circuit Breaker Protection           |                                                         |         |         |         |                   |
| All                                                | Any brand circuit<br>breaker                            | 10 kA   | 10 kA   | 10 kA   | Up to 10 kA       |
| 30–100                                             | HD                                                      | 25 kA   | 18 kA   | 14 kA   |                   |
| 30–100                                             | HG                                                      | 65 kA   | 35 kA   | 18 kA   |                   |
| 30–100                                             | HJ                                                      | 65 kA   | 35 kA   | 25 kA   |                   |
| 30–100                                             | HL                                                      | 65 kA   | 35 kA   | 35 kA   |                   |
| 30–100                                             | HR                                                      | 65 kA   | 35 kA   | 35 kA   |                   |
| 200                                                | HD, JD                                                  | 25 kA   | 18 kA   | 14 kA   |                   |
| 200                                                | HG, JG                                                  | 65 kA   | 35 kA   | 18 kA   |                   |

100. On 600 V, 200 A switches, 100,000 A max. on corner grounded delta when protected by Class J or R fuses.

101. For NEMA Type 4X Fiberglass Reinforced Polyester switches, see [Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25](#) and [Fiberglass Reinforced Polyester 600 Vac Short Circuit Current Rating, page 25](#).

102. NEMA Type 7/9 SCCR 10 kAIR 600 Vac maximum.

103. Ampere rating of fuse or circuit breaker not to exceed switch ampere rating.

**Table 42 - Non-Fusible Safety Switches (Continued)**

| Switch Rating (A) <sup>104</sup><br>105 | Fuse Class or<br>Circuit Breaker<br>Type <sup>106</sup> | 3-Phase |         |         | 250 Vdc / 600 Vdc |
|-----------------------------------------|---------------------------------------------------------|---------|---------|---------|-------------------|
|                                         |                                                         | 240 Vac | 480 Vac | 600 Vac |                   |
| 200                                     | HJ, JJ                                                  | 65 kA   | 35 kA   | 25 kA   |                   |
| 200                                     | HL, JL                                                  | 65 kA   | 35 kA   | 35 kA   |                   |
| 200                                     | HR, JR                                                  | 65 kA   | 35 kA   | 35 kA   |                   |
| 400                                     | LA                                                      | 22 kA   | 22 kA   | 22 kA   |                   |
| 400                                     | LH                                                      | 25 kA   | 25 kA   | 25 kA   |                   |
| 400–600                                 | LD                                                      | 25 kA   | 18 kA   | 14 kA   |                   |
| 400–600                                 | LG                                                      | 65 kA   | 35 kA   | 18 kA   |                   |
| 400–600                                 | LJ                                                      | 100 kA  | 65 kA   | 25 kA   |                   |
| 400–600                                 | LL                                                      | 100 kA  | 65 kA   | 50 kA   |                   |
| 400–600                                 | LR                                                      | 100 kA  | 65 kA   | 65 kA   |                   |

## Terminal Lug Data

**Table 43 - Terminal Lug Data**

| Rating (A) <sup>104</sup> | Wires Per<br>Phase and<br>Neutral | Wire Range Wire<br>Bending Space Per<br>NEC Table 312.6 AWG/<br>kcmil | Lug Wire Range AWG/<br>kcmil            | Optional <sup>105</sup> Versa-<br>Crimp™ Compression<br>Lug Field-Installed | Optional Copper Only<br>Versa-Crimp™<br>Compression Lug<br>Field-Installed <sup>106 107</sup> |
|---------------------------|-----------------------------------|-----------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 30                        | 1                                 | 12–6 (Al) or 14–6 (Cu)                                                | 12–2 (Al) or 14–2 (Cu)                  | —                                                                           | C10–14 <sup>108</sup> , D8–14, or<br>E6–14                                                    |
|                           | 2                                 | 12–10 (Al) or 14–10 (Cu)                                              |                                         |                                                                             |                                                                                               |
| 60 <sup>109</sup>         | 1                                 | 12–3 (Al) or 14–3 (Cu)                                                | 12–2 (Al) or 14–2 (Cu)                  | —                                                                           | C10–14 <sup>108</sup> , D8–14, or<br>E6–14                                                    |
| 100 <sup>110</sup>        | 1                                 | 12–1/0 (Al) or 14–1/0<br>(Cu)                                         | 12–1/0 (Al) or 14–1/0<br>(Cu)           | VCCEL02114S1                                                                | VCCEL02114S1                                                                                  |
| 200 <sup>111</sup>        | 1                                 | 6–250 (Al/Cu)                                                         | 6–300 (Al/Cu)                           | VCCEL030516H1                                                               | VCCEL030516H1                                                                                 |
| 400 <sup>112</sup>        | 1 or 2                            | 1/0–750 (Al/Cu) or 1/0–<br>300 (Al/Cu)                                | 1/0–750 (Al/Cu) and 1/<br>0–300 (Al/Cu) | VCCEL07512H1<br>or<br>VCCEL030516H1<br><sup>113</sup> and<br>VCCEL05012H1   | VCCEL07512H1<br>or<br>VCCEL030516H1<br><sup>114</sup> and<br>VCCEL05012H1                     |

104. For NEMA Type 4X Fiberglass Reinforced Polyester switches, see Fiberglass Reinforced Polyester Enclosures NEMA Type 4X Three-Pole 600 Vac, 600 Vdc, page 25 and Fiberglass Reinforced Polyester 600 Vac Short Circuit Current Rating, page 25.

105. NEMA Type 7/9 SCCR 10 kAIR 600 Vac maximum.

106. Ampere rating of fuse or circuit breaker not to exceed switch ampere rating.

104. 30–100 A switches suitable for 140°F (60°C) or 167°F (75°C) conductors. 200–1200 A switches suitable for 167°F (75°C) conductors.

105. Hubbell Versa-Crimp™ unless otherwise noted.

106. Hubbell Versa-Crimp unless otherwise noted.

107. For NEMA Type 1, 12/3R, 12K and 4/4X/5 stainless steel switches only.

108. Order C10–14, D8–14 and E6–14 from Thomas and Betts.

109. H60XBD and H60XBDAA — use 167°F (75°C) copper wire only. #6 AWG copper wire required for 60 A rating.

110. H100XBD and H100XBDAA — use 167°F (75°C) copper wire only. #3 AWG copper wire required for 100 A rating.

111. H225XJG and H225XJGAA — use 167°F (75°C) copper wire only. Lug wire range is #3 AWG – 350 kcmil. Not UL Listed due to inadequate wire bending space (5 in. (127 mm) on the ON end, 6 in. (152 mm) on the OFF end).

112. Maximum wire bending space allows for (1) 600 kcmil or (2) 300 kcmil Al/Cu on NEMA Type 4/4X/5 stainless steel and NEMA Type 12 switches.

113. For NEMA Type 1 and 3R only. For NEMA Type 4/4X/5 stainless steel and NEMA Type 12/3R, 12K use VCCEL03038H1 (Al/Cu) or VCCEL03038H1 (Cu only). Order two PK516KN mounting kits when installing VCCEL030516H1 lugs. Only one kit is required on two-pole switches. PK561KN consists of four 5/16–18 (7 mm) Keps Nuts.

114. For NEMA Type 4/4X/5 stainless steel and NEMA Type 12/3R, 12K use VCCEL03038H1 (Al/Cu) or VCCEL03038H1 (Cu only). Order two PK516KN mounting kits when installing VCCEL030516H1 or VCCEL030516H1 lugs. Only one kit is required on two-pole switches. PK561KN consists of four 5/16–18 (7 mm) Keps Nuts.

**Table 43 - Terminal Lug Data (Continued)**

| Rating (A) <sup>115</sup> | Wires Per Phase and Neutral | Wire Range Wire Bending Space Per NEC Table 312.6 AWG/kcmil | Lug Wire Range AWG/kcmil | Optional <sup>116</sup> Versa-Crimp™ Compression Lug Field-Installed | Optional Copper Only Versa-Crimp™ Compression Lug Field-Installed <sup>117 118</sup> |
|---------------------------|-----------------------------|-------------------------------------------------------------|--------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 600                       | 2                           | 3/0–500 (Al/Cu)                                             | 3/0–500 (Al/Cu)          | VCEL05012H1                                                          | VCELC05012H1                                                                         |
| 800                       | 3                           | 3/0–750 (Al/Cu)                                             | 3/0–750 (Al/Cu)          | H8LKE2 <sup>119</sup>                                                | —                                                                                    |
| 1200                      | 4                           | 3/0–750 (Al/Cu)                                             | 3/0–750 (Al/Cu)          | H12LKE2                                                              | —                                                                                    |

115. 30–100 A switches suitable for 140°F (60°C) or 167°F (75°C) conductors. 200–1200 A switches suitable for 167°F (75°C) conductors.

116. Hubbell Versa-Crimp™ unless otherwise noted.

117. Hubbell Versa-Crimp unless otherwise noted.

118. For NEMA Type 1, 12/3R, 12K and 4/4X/5 stainless steel switches only.

119. For 800 and 1200 A compression lug kits, see Compression Lug Kits, page 38 for additional information.



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