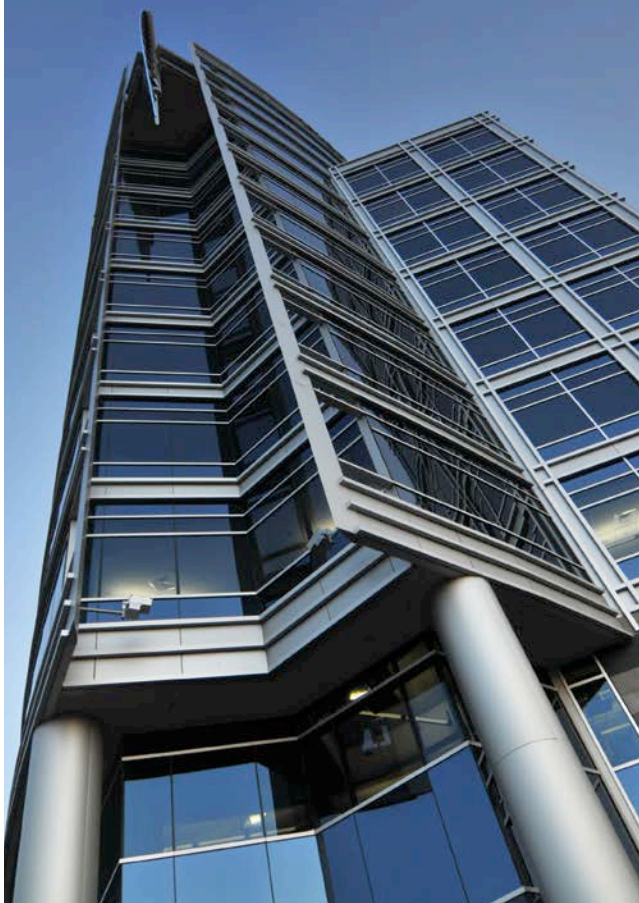


# Quick selector reference guide

Frequently used distribution  
and control products available  
from distributor stock



*Powering Business Worldwide*

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# Questions to ask

## Step

1

Select an interior

Q

What is your voltage?

A

- 120/240 V single-phase, three-wire
- 208Y/120 V three-phase, four-wire
- 240 V three-phase, three-wire
- 480Y/277 V three-phase, four-wire

Q

What is your busbar rating?

A

- 100 A (aluminum or copper)
- 225 A (aluminum or copper)
- 400 A (aluminum or copper)

Q

What is the number of branch circuits/poles?

A

- 18
- 30
- 42

## Step

2

Enclosure type

Q

What enclosure is required?

A

- NEMA® 1 indoor
- NEMA 3R outdoor

## Step

3

Trim type

Q

For NEMA 1 indoor panels, will the panel be mounted recessed in the wall or mounted directly to the wall?

A

- Flush
- Surface

## Step

4

Q

What is the cable entry locations for the incoming feeder?

A

- Top
- Bottom

## Step

5

Main device

Q

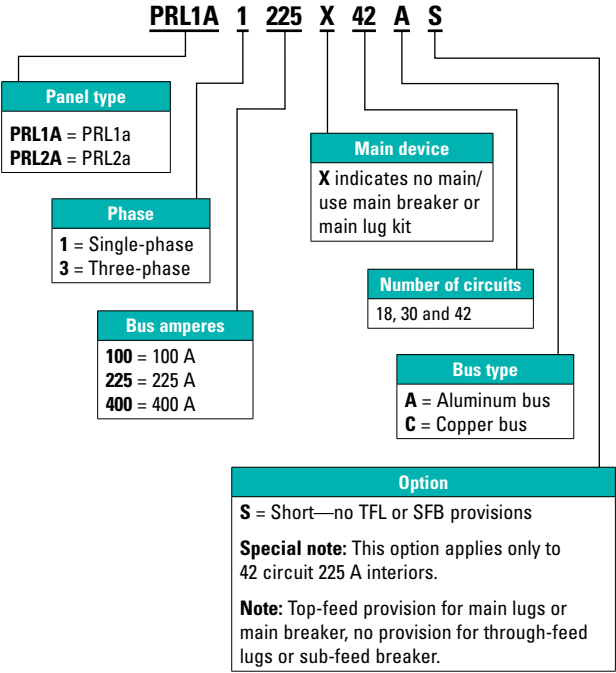
Main lugs only (MLO) or main circuit breaker?

A

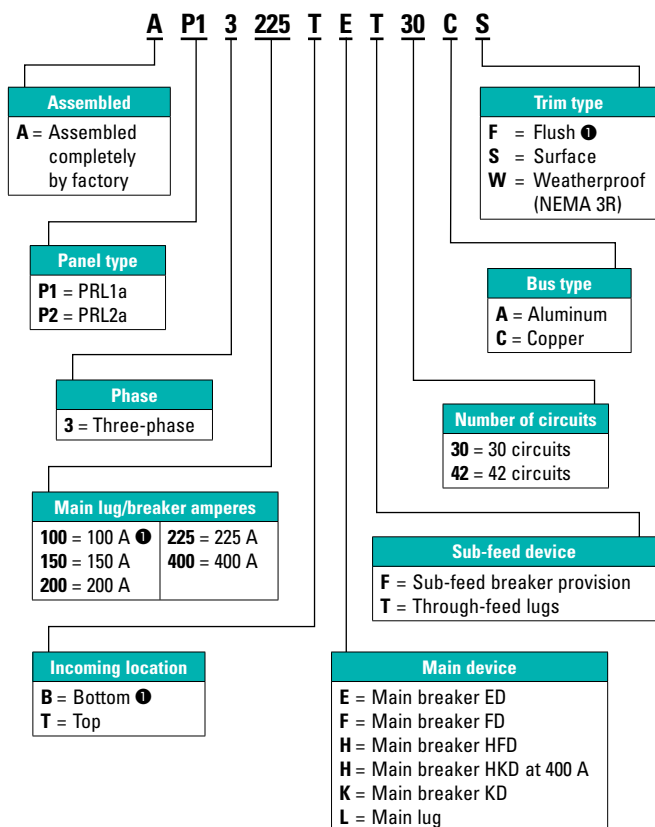
- MLO
- MCB (choose amperage and top or bottom)

# Pow-R-Stock panelboards (unassembled)

Catalog numbering system—  
Pow-R-Stock panelboard interiors



## Catalog numbering system— EZ Panel factory-assembled stock panelboards



❶ These items are not part of the initial launch. Please consult VISTA or your Eaton sales engineer for product availability.

**Notes:** Not all combinations may be valid. Please verify availability of catalog number created. Refer to PA014007EN for more information on the EZ Panel.

Pow-R-Stock panelboards—EZ™ Boxes and EZ Trims

| Capability                           |                      |           |              |                   |                                                  | Catalog numbers              |                  |          |                |          |                    |
|--------------------------------------|----------------------|-----------|--------------|-------------------|--------------------------------------------------|------------------------------|------------------|----------|----------------|----------|--------------------|
| Ampere rating                        | Max. number of poles | Main lugs | Main breaker | Through-feed lugs | Sub-feed breaker (225 A max.)                    | Interiors (less main device) | Boxes            |          | Trims (NEMA 1) |          | NEMA 3R enclosures |
|                                      |                      |           |              |                   |                                                  | Aluminum bus                 | Copper bus       | NEMA 1   | Surface        | Flush    |                    |
| Single-phase, three-wire 120/240 Vac |                      |           |              |                   |                                                  |                              |                  |          |                |          |                    |
| 100                                  | 18                   | ■         | ■            | ■                 | N/A                                              | PRL1A1100X18A                | PRL1A1100X18C    | EZB2036R | EZT2036S       | EZT2036F | GWPBQ2036PR        |
| 100                                  | 30                   | ■         | ■            | ■                 | 100                                              | PRL1A1100X30A                | PRL1A1100X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 100                                  | 42                   | ■         | ■            | ■                 | N/A                                              | PRL1A1100X42A                | PRL1A1100X42C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 30                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A1225X30A                | PRL1A1225X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | ■            | N/A               | N/A                                              | PRL1A1225X42AS ❶             | PRL1A1225X42CS ❶ | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A1225X42A                | PRL1A1225X42C    | EZB2060R | EZT2060S       | EZT2060F | GWPBQ2060PR        |
| 400                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A1400X42A                | PRL1A1400X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | N/A                                              |                              | PRL1A1600X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225, 250, 300, 350, 400 |                              | PRL1A1600X42CL   | EZB2090R | EZT2090S       | EZT2090F | GWPBQ2090PR        |
| Three-phase, four-wire 208Y/120 Vac  |                      |           |              |                   |                                                  |                              |                  |          |                |          |                    |
| 100                                  | 18                   | ■         | ■            | ■                 | N/A                                              | PRL1A3100X18A                | PRL1A3100X18C    | EZB2036R | EZT2036S       | EZT2036F | GWPBQ2036PR        |
| 100                                  | 30                   | ■         | ■            | ■                 | 100                                              | PRL1A3100X30A                | PRL1A3100X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 100                                  | 42                   | ■         | ■            | ■                 | N/A                                              | PRL1A3100X42A                | PRL1A3100X42C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 30                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A3225X30A                | PRL1A3225X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | N/A          | N/A               | N/A                                              | PRL1A3225L42AS               | PRL1A3225L42CS   | EZB2042R | EZT2042S       | EZT2042F | GWPBQ2042PR        |
| 225                                  | 42                   | ■         | ■            | N/A               | N/A                                              | PRL1A3225X42AS ❶             | PRL1A3225X42CS ❶ | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A3225X42A                | PRL1A3225X42C    | EZB2060R | EZT2060S       | EZT2060F | GWPBQ2060PR        |
| 400                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL1A3400X42A                | PRL1A3400X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | N/A                                              |                              | PRL1A3600X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225, 250, 300, 350, 400 |                              | PRL1A3600X42CL   | EZB2090R | EZT2090S       | EZT2090F | GWPBQ2090PR        |
| Three-phase, four-wire 480Y/277 Vac  |                      |           |              |                   |                                                  |                              |                  |          |                |          |                    |
| 100                                  | 18                   | ■         | ■            | ■                 | N/A                                              | PRL2A3100X18A                | PRL2A3100X18C    | EZB2036R | EZT2036S       | EZT2036F | GWPBQ2036PR        |
| 100                                  | 30                   | ■         | ■            | ■                 | 100                                              | PRL2A3100X30A                | PRL2A3100X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 100                                  | 42                   | ■         | ■            | ■                 | N/A                                              | PRL2A3100X42A                | PRL2A3100X42C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 30                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL2A3225X30A                | PRL2A3225X30C    | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | N/A          | N/A               | N/A                                              | PRL2A3225L42AS               | PRL2A3225L42CS   | EZB2042R | EZT2042S       | EZT2042F | GWPBQ2042PR        |
| 225                                  | 42                   | ■         | ■            | N/A               | N/A                                              | PRL2A3225X42AS ❶             | PRL2A3225X42CS ❶ | EZB2048R | EZT2048S       | EZT2048F | GWPBQ2048PR        |
| 225                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL2A3225X42A                | PRL2A3225X42C    | EZB2060R | EZT2060S       | EZT2060F | GWPBQ2060PR        |
| 400                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225                     | PRL2A3400X42A                | PRL2A3400X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | N/A                                              |                              | PRL2A3600X42C    | EZB2072R | EZT2072S       | EZT2072F | GWPBQ2072PR        |
| 600                                  | 42                   | ■         | ■            | ■                 | 100, 125, 150, 175, 200, 225, 250, 300, 350, 400 |                              | PRL2A3600X42CL   | EZB2090R | EZT2090S       | EZT2090F | GWPBQ2090PR        |

❶ S = Short—no TFL or SFB provisions.

**Note:** The colors shown in the tables correspond to the color coding on the trim, interior and box product packaging labels. Be sure that all three parts match when delivering to your customer.

**Note:** Distributors can purchase boxes in quantities via the Distributor toolbox.



## Branch circuit breakers

Summary of branch breakers available

| Breaker | No. of poles | Ampere rating | Voltage  | kAIC rating | Example            | Panel type |
|---------|--------------|---------------|----------|-------------|--------------------|------------|
| BAB ❶❷  | 1            | 15–70         | 120      | 10          | <b>BAB1020</b>     | PRL1a      |
|         | 2            | 15–100        | 120/240  | 10          | <b>BAB2020</b>     | PRL1a      |
|         | 2            | 15–100        | 240      | 10          | <b>BAB2040H</b>    | PRL1a      |
|         | 3            | 15–100        | 240      | 10          | <b>BAB3030H</b>    | PRL1a      |
| QBAF    | 1            | 15–20         | 120      | 10          | <b>QBAF1020</b>    | PRL1a      |
| QBHAF   | 1            | 15–20         | 120      | 22          | <b>QBHAF1020</b>   | PRL1a      |
| QBCAF   | 1            | 15–20         | 120      | 10          | <b>QBCAF1020</b>   | PRL1a      |
| QBHCAF  | 1            | 15–20         | 120      | 22          | <b>QBHCAF1020</b>  | PRL1a      |
| QBGFT   | 1            | 15–40         | 120      | 10          | <b>QBGFT1020</b>   | PRL1a      |
|         | 2            | 15–50         | 120/240  | 10          | <b>QBGFT2040</b>   | PRL1a      |
| QBHGFT  | 1            | 15–30         | 120      | 22          | <b>QBHGFT1020</b>  | PRL1a      |
|         | 2            | 15–30         | 120/240  | 22          | <b>QBHGFT2020</b>  | PRL1a      |
| QBGFEP  | 1            | 15–40         | 120      | 10          | <b>QBGFEP1020</b>  | PRL1a      |
|         | 2            | 15–50         | 120/240  | 10          | <b>QBGFEP2020</b>  | PRL1a      |
| QBHGFEF | 1            | 15–30         | 120      | 22          | <b>QBHGFEF1020</b> | PRL1a      |
|         | 2            | 15–30         | 120/240  | 22          | <b>QBHGFEF2020</b> | PRL1a      |
| QBHW ❶  | 1            | 15–70         | 120      | 22          | <b>QBHW1020</b>    | PRL1a      |
|         | 2            | 15–100        | 120/240  | 22          | <b>QBHW2020</b>    | PRL1a      |
|         | 2            | 15–100        | 240      | 22          | <b>QBHW2040H</b>   | PRL1a      |
|         | 3            | 15–100        | 240      | 22          | <b>QBHW3030H</b>   | PRL1a      |
| GHQ ❶   | 1            | 15–20         | 277      | 14          | <b>GHQ1020</b>     | PRL2a      |
| GHB ❶❷  | 1            | 15–100        | 277      | 14          | <b>GHB1020</b>     | PRL2a      |
|         | 2            | 15–100        | 480Y/277 | 14          | <b>GHB2040</b>     | PRL2a      |
|         | 3            | 15–100        | 480Y/277 | 14          | <b>GHB3060</b>     | PRL2a      |

❶ BAB, QBHW, GHQ and GHB breakers installed in PRL1a and PRL2a are available with shunt trip, i.e., BAB1020S.

❷ BAB-H and GHB 70–100 A available as chassis-mounted main device.

## Main circuit breaker kits

### Kits—main circuit breaker (includes circuit breaker and terminals)

| Max. volt. | Ampere rating | Service                | Breaker frame | Mounting location | Wire range Al/Cu (in kcmil) | Catalog number  |
|------------|---------------|------------------------|---------------|-------------------|-----------------------------|-----------------|
| 240 Vac    | 100           | Single- or three-phase | ED            | Top               | (1) #14–1/0                 | <b>BKED100T</b> |
|            | 125           | Single- or three-phase | ED            | Top               | (1) #4–4/0                  | <b>BKED125T</b> |
|            | 150           | Single- or three-phase | ED            | Top               | (1) #4–4/0                  | <b>BKED150T</b> |
|            | 175           | Single- or three-phase | ED            | Top               | (1) #4–4/0 ①                | <b>BKED175T</b> |
|            | 200           | Single- or three-phase | ED            | Top               | (1) #4–4/0 ①                | <b>BKED200T</b> |
|            | 225           | Single- or three-phase | ED            | Top               | (1) #4–4/0 ①                | <b>BKED225T</b> |
| 240 Vac    | 100           | Single- or three-phase | ED            | Bottom            | (1) #14–1/0                 | <b>BKED100B</b> |
|            | 125           | Single- or three-phase | ED            | Bottom            | (1) #4–4/0                  | <b>BKED125B</b> |
|            | 150           | Single- or three-phase | ED            | Bottom            | (1) #4–4/0                  | <b>BKED150B</b> |
|            | 175           | Single- or three-phase | ED            | Bottom            | (1) #4–4/0 ①                | <b>BKED175B</b> |
|            | 200           | Single- or three-phase | ED            | Bottom            | (1) #4–4/0 ①                | <b>BKED200B</b> |
|            | 225           | Single- or three-phase | ED            | Bottom            | (1) #4–4/0 ①                | <b>BKED225B</b> |
| 480 Vac    | 100           | Single- or three-phase | FD            | Top               | (1) #14–1/0                 | <b>BKFD100T</b> |
|            | 110           | Single- or three-phase | FD            | Top               | (1) #4–4/0                  | <b>BKFD110T</b> |
|            | 125           | Single- or three-phase | FD            | Top               | (1) #4–4/0                  | <b>BKFD125T</b> |
|            | 150           | Single- or three-phase | FD            | Top               | (1) #4–4/0                  | <b>BKFD150T</b> |
|            | 175           | Single- or three-phase | FD            | Top               | (1) #4–4/0 ①                | <b>BKFD175T</b> |
|            | 200           | Single- or three-phase | FD            | Top               | (1) #4–4/0 ①                | <b>BKFD200T</b> |
|            | 225           | Single- or three-phase | FD            | Top               | (1) #4–4/0 ①                | <b>BKFD225T</b> |
| 480 Vac    | 100           | Single- or three-phase | FD            | Bottom            | (1) #14–1/0                 | <b>BKFD100B</b> |
|            | 110           | Single- or three-phase | FD            | Bottom            | (1) #4–1/0                  | <b>BKFD110B</b> |
|            | 125           | Single- or three-phase | FD            | Bottom            | (1) #4–4/0                  | <b>BKFD125B</b> |
|            | 150           | Single- or three-phase | FD            | Bottom            | (1) #4–4/0                  | <b>BKFD150B</b> |
|            | 175           | Single- or three-phase | FD            | Bottom            | (1) #4–4/0 ①                | <b>BKFD175B</b> |
|            | 200           | Single- or three-phase | FD            | Bottom            | (1) #4–4/0 ①                | <b>BKFD200B</b> |
|            | 225           | Single- or three-phase | FD            | Bottom            | (1) #4–4/0 ①                | <b>BKFD225B</b> |

① Order optional lug kit catalog no. 3TA225FDK for 175–225 A ED- and FD-Frame three-pole circuit breakers to provide terminations for (1) #6–300 kcmil.

## Main circuit breaker kits

### Kits—main circuit breaker (includes circuit breaker and terminals)

| Max. volt. | Ampere rating | Service                | Breaker frame | Mounting location | Wire range Al/Cu (in kcmil) | Catalog number   |
|------------|---------------|------------------------|---------------|-------------------|-----------------------------|------------------|
| 480 Vac    | 100           | Single- or three-phase | HFD           | Top               | (1) #14–1/0                 | <b>BKHFD100T</b> |
|            | 110           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD110T</b> |
|            | 125           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD125T</b> |
|            | 150           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD150T</b> |
|            | 175           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD175T</b> |
|            | 200           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD200T</b> |
|            | 225           | Single- or three-phase | HFD           | Top               | (2) #4–4/0                  | <b>BKHFD225T</b> |
| 480 Vac    | 100           | Single- or three-phase | HFD           | Bottom            | (1) #14–1/0                 | <b>BKHFD100B</b> |
|            | 110           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD110B</b> |
|            | 125           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD125B</b> |
|            | 150           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD150B</b> |
|            | 175           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD175B</b> |
|            | 200           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD200B</b> |
|            | 225           | Single- or three-phase | HFD           | Bottom            | (2) #4–4/0                  | <b>BKHFD225B</b> |
| 480 Vac    | 250           | Single- or three-phase | KD            | Top               | (1) 250–500                 | <b>BKKD250T</b>  |
|            | 300           | Single- or three-phase | KD            | Top               | (1) 250–500                 | <b>BKKD300T</b>  |
|            | 350           | Single- or three-phase | KD            | Top               | (1) 250–500                 | <b>BKKD350T</b>  |
|            | 400           | Single- or three-phase | KD            | Top               | (2) 3/0–250 or (1) 3/0–500  | <b>BKKD400T</b>  |
| 480 Vac    | 250           | Single- or three-phase | KD            | Bottom            | (1) 250–500                 | <b>BKKD250B</b>  |
|            | 300           | Single- or three-phase | KD            | Bottom            | (1) 250–500                 | <b>BKKD300B</b>  |
|            | 350           | Single- or three-phase | KD            | Bottom            | (1) 250–500                 | <b>BKKD350B</b>  |
|            | 400           | Single- or three-phase | KD            | Bottom            | (2) 3/0–250 or (1) 3/0–500  | <b>BKKD400B</b>  |

**Note:** KD kits are to be used on 400 A panels only.

## Main circuit breaker kits

### Kits—main circuit breaker (includes circuit breaker and terminals)

| Max. volt. | Ampere rating | Service                | Breaker frame | Mounting location | Wire range Al/Cu (in kcmil) | Catalog number   |
|------------|---------------|------------------------|---------------|-------------------|-----------------------------|------------------|
| 480 Vac    | 250           | Single- or three-phase | HKD           | Top               | (1) 250–500                 | <b>BKHKD250T</b> |
|            | 300           | Single- or three-phase | HKD           | Top               | (1) 250–500                 | <b>BKHKD300T</b> |
|            | 350           | Single- or three-phase | HKD           | Top               | (1) 250–500                 | <b>BKHKD350T</b> |
|            | 400           | Single- or three-phase | HKD           | Top               | (1) 250–500                 | <b>BKHKD400T</b> |
| 480 Vac    | 250           | Single- or three-phase | HKD           | Bottom            | (1) 250–500                 | <b>BKHKD250B</b> |
|            | 300           | Single- or three-phase | HKD           | Bottom            | (1) 250–500                 | <b>BKHKD300B</b> |
|            | 350           | Single- or three-phase | HKD           | Bottom            | (1) 250–500                 | <b>BKHKD350B</b> |
|            | 400           | Single- or three-phase | HKD           | Bottom            | (1) 250–500                 | <b>BKHKD400B</b> |
| 480 Vac    | 400           | Single- or three-phase | LG            | Top               | (1) #2–500                  | <b>BKLGE400T</b> |
|            | 500           | Single- or three-phase | LG            | Top               | (2) #2–500                  | <b>BKLGE500T</b> |
|            | 600           | Single- or three-phase | LG            | Top               | (2) #2–500                  | <b>BKLGE600T</b> |
| 480 Vac    | 400           | Single- or three-phase | LG            | Bottom            | (1) #2–500                  | <b>BKLGE400B</b> |
|            | 500           | Single- or three-phase | LG            | Bottom            | (2) #2–500                  | <b>BKLGE500B</b> |
|            | 600           | Single- or three-phase | LG            | Bottom            | (2) #2–500                  | <b>BKLGE600B</b> |

## Lug kits and accessories

### Standard main/sub-feed breaker lug capacities

| Ampere rating | Lug wire range Al/Cu                   |
|---------------|----------------------------------------|
| 100           | (1) #14–1/0                            |
| 125–225       | (1) #4–4/0                             |
| 250–350       | (1) 250–500 kcmil                      |
| 400           | (2) 3/0–250 kcmil or (1) 3/0–500 kcmil |

### Main/through-feed lug kits

| Ampere rating | Wire range Al/Cu | Catalog number   |
|---------------|------------------|------------------|
| 100           | (1) #14–1/0      | <b>LUGKIT100</b> |
| 225           | (1) #6–300 kcmil | <b>LUGKIT225</b> |
| 400           | (2) #2–500 kcmil | <b>LUGKIT400</b> |
| 600           | (2) #2–500 kcmil | <b>LUGKIT600</b> |

### Kits

| Description                                                                              | Catalog number |               |                   |
|------------------------------------------------------------------------------------------|----------------|---------------|-------------------|
|                                                                                          | 100 A          | 225 A         | 400/600 A         |
| Service entrance kit                                                                     | <b>SEK1/2</b>  | <b>SEK1.2</b> | <b>SEK4/6</b>     |
| 200% neutral kit                                                                         | <b>2NK100</b>  | <b>2NK225</b> | <b>1NK400</b>     |
| Sub-feed breaker adapter<br>(used to mount 225 A<br>sub-feed breaker in<br>400 A panels) | —              | —             | <b>225ASFBKIT</b> |
| Sub-feed breaker adapter<br>(used to mount 225 A<br>sub-feed breaker in<br>600 A panels) | —              | —             | <b>225BSFBKIT</b> |
| Sub-feed breaker adapter<br>(used to mount 400 A<br>sub-feed breaker in<br>600 A panels) | —              | —             | <b>400ASFBKIT</b> |

### Accessories

| Description             | Catalog number    |
|-------------------------|-------------------|
| Isolated ground bar kit | <b>ISOGROUND</b>  |
| Copper ground bar kit   | <b>CUGROUND</b>   |
| 1P filler plate ❶       | <b>5155C62H01</b> |
| Series rating kit ❷     | <b>SRK</b>        |

❶ Each PRS panel comes with 50% filler plates, e.g., 18 circuit interior contains 9 filler plates.

❷ Series rating kit includes series rating book and adhesive sleeve and series rating sticker. If panelboard is being series rated higher than the base rating, an SRK is required.

# Questions to ask

## Step 1

Q Which type of switch do you need?

- A
- Heavy-duty (DH)
  - General-duty (DG)
  - Double-throw (DT)

## Step 2

Q What current (ampere) rating do you need?

- A
- 30, 60, 100, 200, 400, 600, 800, 1200

## Step 3

Q Should it be fused, non-fused or fusible with neutral?

- A
- F = Fusible without neutral
  - U = Non-fusible
  - N = Fusible with neutral

## Step 4

Q How many poles?

- A
- 1, 2, 3, 4, 6

## Step 5

Q Choose the maximum circuit voltage.

- A
- 240 Vac
  - 600 Vac

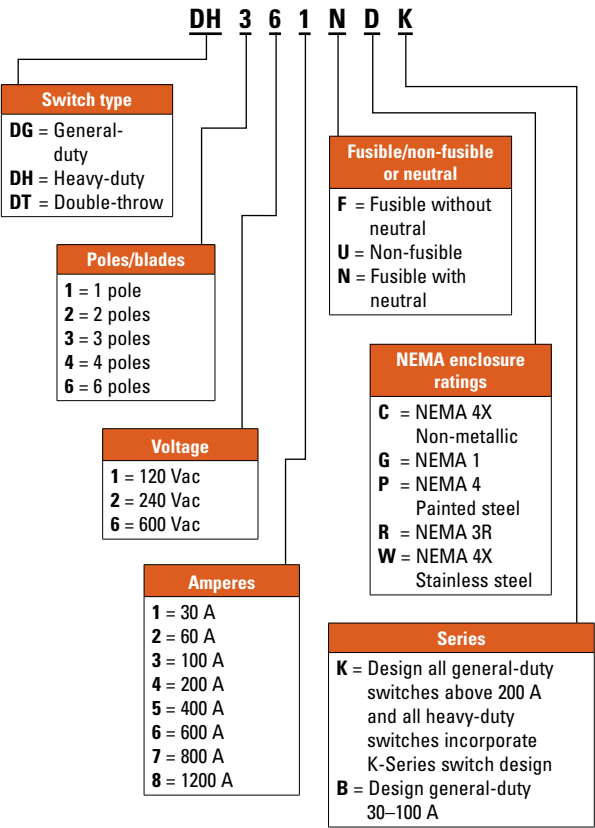
## Step 6

Q What type of enclosure do you need?

- A
- NEMA 1
  - NEMA 3R
  - NEMA 12
  - NEMA 4 painted steel
  - NEMA 4X stainless steel
  - NEMA 4X non-metallic

# Safety switches/ disconnects

Catalog numbering system—safety switches



## General-duty safety switches (disconnects)

**Two-pole—240 Vac (suitable for service entrance use with a neutral or ground kit)**

| Current rating (amps) | Type                 | Enclosure type | Max. hp ratings |         | Catalog number |
|-----------------------|----------------------|----------------|-----------------|---------|----------------|
|                       |                      |                | Single-phase    |         |                |
|                       |                      |                | 120 Vac         | 240 Vac |                |
| 30                    | Fusible with neutral | NEMA 1         |                 | 1.5–3   | DG221NGB       |
| 30                    | Non-fusible          | NEMA 1         | 2               | 3       | DG221UGB       |
| 30                    | Fusible with neutral | NEMA 3R        |                 | 1.5–3   | DG221NRB       |
| 30                    | Non-fusible          | NEMA 3R        | 2               | 3       | DG221URB       |
| 60                    | Fusible with neutral | NEMA 1         |                 | 3–10    | DG222NGB       |
| 60                    | Non-fusible          | NEMA 1         | 3               | 10      | DG222UGB       |
| 60                    | Fusible with neutral | NEMA 3R        |                 | 3–10    | DG222NRB       |
| 60                    | Non-fusible          | NEMA 3R        | 1               | 10      | DG222URB       |
| 100                   | Fusible with neutral | NEMA 1         |                 | 7.5–15  | DG223NGB       |
| 100                   | Non-fusible          | NEMA 1         |                 | 15      | DG223UGB       |
| 100                   | Fusible with neutral | NEMA 3R        |                 | 7.5–15  | DG223NRB       |
| 100                   | Non-fusible          | NEMA 3R        |                 | 15      | DG223URB       |

**Three-pole—240 Vac (suitable for service entrance use with a neutral or ground lug kit)**

| Current rating (amps) | Type                 | Enclosure type | Max. hp ratings ❶       |                        | Catalog number |
|-----------------------|----------------------|----------------|-------------------------|------------------------|----------------|
|                       |                      |                | Single-phase<br>240 Vac | Three-phase<br>240 Vac |                |
| 30                    | Fusible with neutral | NEMA 1         | 1.5–3                   | 3–7.5                  | DG321NGB       |
| 30                    | Non-fusible          | NEMA 1         | 3                       | 7.5                    | DG321UGB       |
| 30                    | Fusible with neutral | NEMA 3R        | 1.5–3                   | 3–7.5                  | DG321NRB       |
| 30                    | Non-fusible          | NEMA 3R        | 3                       | 7.5                    | DG321URB       |
| 60                    | Fusible with neutral | NEMA 1         | 3–10                    | 7.5–15                 | DG322NGB       |
| 60                    | Non-fusible          | NEMA 1         | 10                      | 15                     | DG322UGB       |
| 60                    | Fusible with neutral | NEMA 3R        | 3–10                    | 7.5–15                 | DG322NRB       |
| 60                    | Non-fusible          | NEMA 3R        | 10                      | 15                     | DG322URB       |
| 100                   | Fusible with neutral | NEMA 1         | 7.5–15                  | 15–30                  | DG323NGB       |
| 100                   | Non-fusible          | NEMA 1         | 15                      | 30                     | DG323UGB       |
| 100                   | Fusible with neutral | NEMA 3R        | 7.5–15                  | 15–30                  | DG323NRB       |
| 100                   | Non-fusible          | NEMA 3R        | 15                      | 30                     | DG323URB       |

❶ Maximum hp ratings for fusible units apply only when dual element time-delay fuses are used.

### Neutral and ground lug kits

| Description                          | Catalog number |
|--------------------------------------|----------------|
| Neutral kit for 30 A switches        | DG030NB        |
| Neutral kit for 60–100 A switches    | DG100NB        |
| Ground lug kit for 30–100 A switches | DG030GB        |

### Class R fuse adapter kits

| Ampere rating | Type         | Voltage | Catalog number |
|---------------|--------------|---------|----------------|
| 30            | General-duty | 240     | DG30RB         |
| 60            | General-duty | 240     | DS16FK         |
| 100           | General-duty | 240     | DG100RB        |



## Heavy-duty safety switches (disconnects)

**Three-pole—480–600 Vac (suitable for service entrance use with a neutral or ground lug kit below)**

| Current rating (amps) | Type        | Enclosure type | Max. hp ratings |       |             |       | Catalog number |
|-----------------------|-------------|----------------|-----------------|-------|-------------|-------|----------------|
|                       |             |                | Single-phase    |       | Three-phase |       |                |
|                       |             |                | 480 V           | 600 V | 480 V       | 600 V |                |
| 30                    | Fusible     | NEMA 1         | 7.5             | 15    | 10          | 20    | DH361FGK ❶     |
| 30                    | Non-fusible | NEMA 1         | 7.5             | 15    | 10          | 20    | DH361UGK       |
| 30                    | Fusible     | NEMA 3R        | 7.5             | 15    | 10          | 20    | DH361FRK ❶     |
| 30                    | Non-fusible | NEMA 3R        | 7.5             | 15    | 10          | 20    | DH361URK       |
| 30                    | Fusible     | NEMA 4X        | 7.5             | 10    | 15          | 20    | DH361FWK ❶     |
| 30                    | Non-fusible | NEMA 4X        | 7.5             | 10    | 20          | 30    | DH361UWK       |
| 60                    | Fusible     | NEMA 1         | 20              | 30    | 25          | 50    | DH362FGK       |
| 60                    | Non-fusible | NEMA 1         | 20              | 30    | 25          | 50    | DH362UGK       |
| 60                    | Fusible     | NEMA 3R        | 20              | 30    | 25          | 50    | DH362FRK       |
| 60                    | Non-fusible | NEMA 3R        | 20              | 30    | 25          | 50    | DH362URK       |
| 60                    | Fusible     | NEMA 4X        | 20              | 25    | 30          | 50    | DH362FWK       |
| 60                    | Non-fusible | NEMA 4X        | 20              | 25    | 50          | 60    | DH362UWK       |
| 100                   | Fusible     | NEMA 1         | 30              | 60    | 40          | 75    | DH363FGK       |
| 100                   | Non-fusible | NEMA 1         | 30              | 60    | 40          | 75    | DH363UGK       |
| 100                   | Fusible     | NEMA 3R        | 30              | 60    | 40          | 75    | DH363FRK       |
| 100                   | Non-fusible | NEMA 3R        | 30              | 60    | 40          | 75    | DH363URK       |
| 100                   | Fusible     | NEMA 4X        | 30              | 40    | 60          | 75    | DH363FWK       |
| 100                   | Non-fusible | NEMA 4X        | 40              | 50    | 75          | 100   | DH363UWK       |
| 200                   | Fusible     | NEMA 1         | 50              | 125   | 50          | 150   | DH364FGK       |
| 200                   | Non-fusible | NEMA 1         | 50              | 125   | 50          | 150   | DH364UGK       |
| 200                   | Fusible     | NEMA 3R        | 50              | 125   | 50          | 150   | DH364FRK       |
| 200                   | Non-fusible | NEMA 3R        | 50              | 125   | 50          | 150   | DH364URK       |
| 200                   | Fusible     | NEMA 4X        | 50              | 50    | 125         | 150   | DH364FWK       |
| 200                   | Non-fusible | NEMA 4X        | 50              | 50    | 125         | 125   | DH364UWK       |

❶ For 30 A switches requiring Class J fusing, switch must be ordered with the Class J clips from the factory by adding a suffix “J” on the end.

## Safety switch kits

### Neutral and ground lug kits ❶

| Description                          | Catalog number |
|--------------------------------------|----------------|
| Neutral kit for 30–60 A switches     | <b>DH030NK</b> |
| Neutral kit for 100 A switches       | <b>DH100NK</b> |
| Neutral kit for 200 A switches       | <b>DG200NK</b> |
| Ground lug kit for 30–100 A switches | <b>DS100GK</b> |
| Ground lug kit for 200 A switches    | <b>DS200GK</b> |

- ❶ A factory-installed ground lug is supplied on all NEMA 4, 4X and 12 safety switches, as well as all 400 A and higher NEMA 1 and 3R safety switches. A factory-installed ground lug is also supplied on all heavy-duty NEMA 1 and 3R 30–200 A switches that do not have a factory installed neutral.

### Class R fuse adapter kits

| Ampere rating | Type       | Voltage | Catalog number |
|---------------|------------|---------|----------------|
| 30            | Heavy-duty | 600     | <b>DS16FK</b>  |
| 60            | Heavy-duty | 600     | <b>DS26FK</b>  |
| 100           | Heavy-duty | 600     | <b>DS36FK</b>  |
| 200           | Heavy-duty | 600     | <b>DS346FK</b> |

### Class J fuse adapter kit ❶

| Ampere rating | Type       | Voltage | Catalog number |
|---------------|------------|---------|----------------|
| 60            | Heavy-duty | 600     | <b>DS26JK</b>  |

- ❶ 30 A switches must be ordered from the factory with Class J fuse provisions by adding suffix “J” at the end of the switch catalog number. 100 A and 200 A switches can be field modified by moving the load side fuse base.

# Questions to ask

Step  
1

Q How many phases?

A — Single-phase  
— Three-phase

Step  
2

Q What type of enclosure is required?

A — Ventilated  
— Encapsulated

Step  
3

Q What is the primary voltage? (input voltage)

A — Single-phase is 240 V x 480 V  
— Three-phase is 480 V delta (three-phase, three-wire)

Step  
4

Q What is the secondary voltage? (output voltage)

A — Single-phase  
— 120/240  
  
— Three-phase  
— 208Y/120 (three-phase, four-wire) or 240 V delta

Step  
5

Q What kVA transformer is required?

A — If single-phase encapsulated, kVAs are:  
0.05, 0.075, 0.1, 0.15, 0.25, 0.5, 0.75, 1,  
1.5, 2, 3, 5, 7.5, 10, 15, 25, 37.5  
— If single-phase ventilated, kVAs are:  
15, 25, 37.5, 50, 75, 100, 167  
— If three-phase encapsulated, kVAs are:  
3, 6, 9, 15, 30, 45, 75  
— If three-phase ventilated, kVAs are:  
15, 30, 45, 75, 112.5, 150, 225, 300

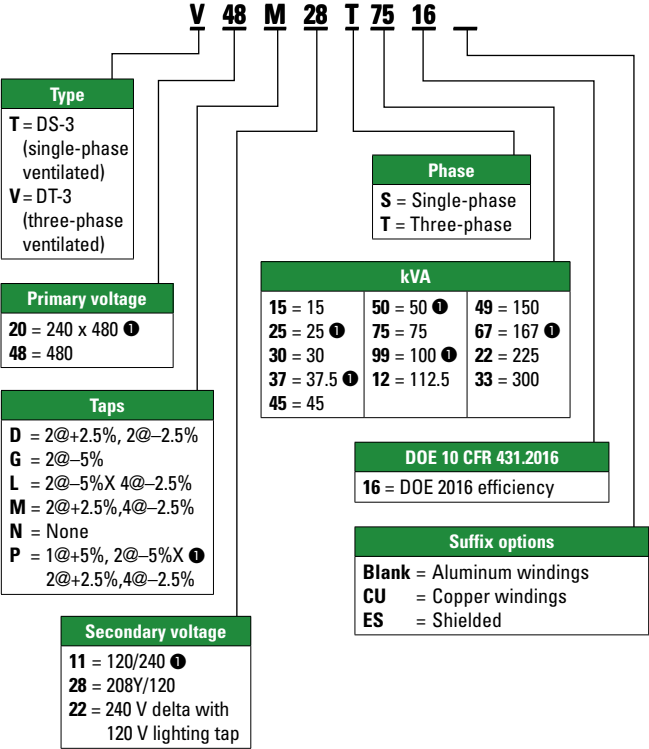
Step  
6

Q If a ventilated transformer was selected

A — Field kits: lug kits or weathershields  
— Select from selection tables

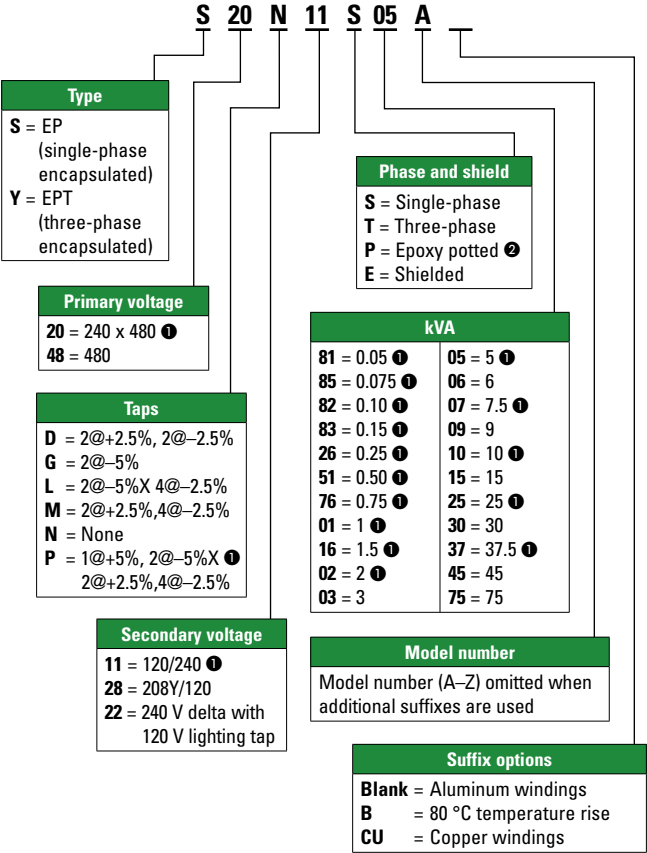
# Transformers

Catalog numbering system—DOE 2016 ventilated transformers



❶ Typically used with single-phase transformers.

Catalog numbering system—encapsulated transformers



❶ Typically used with single-phase transformers.

❷ Single-phase 0.25–2 kVA encapsulated transformers only.

## General-purpose transformers

### Three-phase ventilated, 480 delta—208 Y/120, 150 °C rise, aluminum windings, DOE 2016

| kVA   | Frame number | Wiring diagram | Weathershield | Typical lug kit | Catalog number |
|-------|--------------|----------------|---------------|-----------------|----------------|
| 15    | 939          | 280B           | WS57          | LKS1            | V48M28T1516 ①  |
| 30    | 940          | 280B           | WS58          | LKS1            | V48M28T3016 ①  |
| 45    | 940          | 280B           | WS58          | LKS1            | V48M28T4516 ①  |
| 75    | 942          | 280B           | WS59          | LKS2            | V48M28T7516 ②  |
| 112.5 | 943          | 280B           | WS60          | LKS2            | V48M28T1216 ②  |
| 150   | 943          | 280B           | WS60          | LKS3            | V48M28T4916 ②  |
| 225   | 944          | 280B           | WS61          | LKS3            | V48M28T2216    |
| 300   | 945          | 280B           | WS62          | LKS3            | V48M28T3316    |

① Suitable for use with wall-mounted bracket WMB05.

② Suitable for use with wall-mounted bracket WMB04.

### Three-phase ventilated, 480 delta—240/120 lighting tap, 150 °C rise, aluminum windings, DOE 2016

| kVA   | Frame number | Wiring diagram | Weathershield | Typical lug kit | Catalog number |
|-------|--------------|----------------|---------------|-----------------|----------------|
| 15    | 939          | 282B           | WS57          | LKS1            | V48M22T1516 ①  |
| 30    | 940          | 282B           | WS58          | LKS1            | V48M22T3016 ①  |
| 45    | 940          | 282B           | WS58          | LKS1            | V48M22T4516 ①  |
| 75    | 942          | 282B           | WS59          | LKS2            | V48M22T7516 ②  |
| 112.5 | 943          | 282B           | WS60          | LKS2            | V48M22T1216 ②  |
| 150   | 943          | 282B           | WS60          | LKS3            | V48M22T4916 ②  |
| 225   | 944          | 282B           | WS61          | LKS3            | V48M22T2216    |
| 300   | 945          | 282B           | WS62          | LKS3            | V48M22T3316    |

① Suitable for use with wall-mounted bracket WMB05.

② Suitable for use with wall-mounted bracket WMB04.

### Three-phase encapsulated, 480 delta—208 Y/120, 115 °C rise

| kVA | Frame number | Wiring diagram | Catalog number |
|-----|--------------|----------------|----------------|
| 3   | 201          | 70A            | Y48G28T03N     |
| 6   | 200          | 70A            | Y48G28T06N     |
| 9   | 103          | 70A            | Y48G28T09N     |
| 15  | 95           | 72B            | Y48D28T15N     |
| 30  | 243          | 84A            | Y48M28T30N     |
| 45  | 244          | 84A            | Y48M28T45N     |
| 75  | 245          | 84A            | Y48M28T75N     |

**Note:** For frame drawings and wiring diagrams, refer to [www.eaton.com/transformers](http://www.eaton.com/transformers).

## General-purpose transformers

**Single-phase ventilated, 240 x 480—120/240, 150 °C rise, aluminum windings, DOE 2016**

| kVA  | Frame number | Wiring diagram | Weathershield | Typical lug kit | Catalog number |
|------|--------------|----------------|---------------|-----------------|----------------|
| 15   | 842          | 3XA            | WS45          | LKS1            | T20P11S1516 ❶  |
| 25   | 842          | 3XA            | WS45          | LKS1            | T20P11S2516 ❶  |
| 37.5 | 843          | 3XA            | WS43          | LKS1            | T20P11S3716    |
| 50   | 843          | 3XA            | WS43          | LKS2            | T20P11S5016    |
| 75   | 844          | 3XA            | WS44          | LKS2            | T20P11S7516    |
| 100  | 844          | 3XA            | WS44          | LKS3            | T20P11S9916    |
| 167  | 814          | 288A           | WS13          | LKS3            | T48P11S6716 ❷  |

❶ Suitable for use with wall-mounted bracket WMB01.

❷ 480 V primary only.

**Single-phase encapsulated 240 x 480—120/240, 115 °C rise**

| kVA   | Frame number | Wiring diagram | Catalog number |
|-------|--------------|----------------|----------------|
| 0.05  | 52           | 3A             | S20N11S81N     |
| 0.075 | 53           | 3A             | S20N11S85N     |
| 0.1   | 54           | 3A             | S20N11S82N     |
| 0.15  | 55           | 3A             | S20N11S83N     |
| 0.25  | 57P          | 3A             | S20N11P26P     |
| 0.5   | 57P          | 3A             | S20N11P51P     |
| 0.75  | 58P          | 3A             | S20N11P76P     |
| 1     | 67P          | 3A             | S20N11P01P     |
| 1.5   | 67P          | 3A             | S20N11P16P     |
| 2     | 68P          | 3A             | S20N11P02P     |
| 3     | 176          | 3A             | S20N11S03N     |
| 5     | 177          | 3A             | S20N11S05N     |
| 7.5   | 178          | 3A             | S20N11S07N     |
| 10    | 179          | 3A             | S20N11S10N     |
| 15    | 180          | 3A             | S20N11S15N     |
| 25    | 182          | 23A            | S20L11S25N     |
| 37.5  | 300A         | 248A           | S20L11S37      |

**Note:** For frame drawings and wiring diagrams, refer to [www.eaton.com/transformers](http://www.eaton.com/transformers).

## General-purpose transformers sizing tables

### Three-phase transformer full load current

| kVA   | Rated line-line voltage |        |        |       |       |       |       |
|-------|-------------------------|--------|--------|-------|-------|-------|-------|
|       | 208                     | 240    | 480    | 600   | 2400  | 4160  | 4800  |
| 3     | 8.3                     | 7.2    | 3.6    | 2.9   | 0.7   | 0.4   | 0.4   |
| 6     | 16.7                    | 14.4   | 7.2    | 5.8   | 1.4   | 0.8   | 0.7   |
| 9     | 25.0                    | 21.7   | 10.8   | 8.7   | 2.2   | 1.2   | 1.1   |
| 15    | 41.6                    | 36.1   | 18.0   | 14.4  | 3.6   | 2.1   | 1.8   |
| 30    | 83.3                    | 72.2   | 36.1   | 28.9  | 7.2   | 4.2   | 3.6   |
| 45    | 124.9                   | 108.3  | 54.1   | 43.3  | 10.8  | 6.2   | 5.4   |
| 75    | 208.2                   | 180.4  | 90.2   | 72.2  | 18.0  | 10.4  | 9.0   |
| 112.5 | 312.3                   | 270.6  | 135.3  | 108.3 | 27.1  | 15.6  | 13.5  |
| 150   | 416.4                   | 360.9  | 180.4  | 144.3 | 36.1  | 20.8  | 18.0  |
| 225   | 624.6                   | 541.3  | 270.6  | 216.5 | 54.1  | 31.2  | 27.1  |
| 300   | 832.7                   | 721.7  | 360.9  | 288.7 | 72.2  | 41.6  | 36.1  |
| 500   | 1387.9                  | 1202.8 | 601.4  | 481.1 | 120.3 | 69.4  | 60.1  |
| 750   | 2081.9                  | 1804.3 | 902.1  | 721.7 | 180.4 | 104.1 | 90.2  |
| 1000  | 2775.8                  | 2405.7 | 1202.8 | 962.3 | 240.6 | 138.8 | 120.3 |

**Note:** Line current = (kVA x 1000) / (line voltage x 1.732).

### Single-phase transformer full load current

| kVA  | Rated line-line voltage |        |        |        |       |       |       |      |      |
|------|-------------------------|--------|--------|--------|-------|-------|-------|------|------|
|      | 120                     | 208    | 240    | 277    | 480   | 600   | 2400  | 4160 | 4800 |
| 0.5  | 4.2                     | 2.4    | 2.1    | 1.8    | 1.0   | 0.8   | 0.2   | 0.1  | 0.1  |
| 1    | 8.3                     | 4.8    | 4.2    | 3.6    | 2.1   | 1.7   | 0.4   | 0.2  | 0.2  |
| 1.5  | 12.5                    | 7.2    | 6.3    | 5.4    | 3.1   | 2.5   | 0.6   | 0.4  | 0.3  |
| 2    | 16.7                    | 9.6    | 8.3    | 7.2    | 4.2   | 3.3   | 0.8   | 0.5  | 0.4  |
| 3    | 25.0                    | 14.4   | 12.5   | 10.8   | 6.3   | 5.0   | 1.3   | 0.7  | 0.6  |
| 5    | 41.7                    | 24.0   | 20.8   | 18.1   | 10.4  | 8.3   | 2.1   | 1.2  | 1.0  |
| 7.5  | 62.5                    | 36.1   | 31.3   | 27.1   | 15.6  | 12.5  | 3.1   | 1.8  | 1.6  |
| 10   | 83.3                    | 48.1   | 41.7   | 36.1   | 20.8  | 16.7  | 4.2   | 2.4  | 2.1  |
| 15   | 125.0                   | 72.1   | 62.5   | 54.2   | 31.3  | 25.0  | 6.3   | 3.6  | 3.1  |
| 25   | 208.3                   | 120.2  | 104.2  | 90.3   | 52.1  | 41.7  | 10.4  | 6.0  | 5.2  |
| 37.5 | 312.5                   | 180.3  | 156.3  | 135.4  | 78.1  | 62.5  | 15.6  | 9.0  | 7.8  |
| 50   | 416.7                   | 240.4  | 208.3  | 180.5  | 104.2 | 83.3  | 20.8  | 12.0 | 10.4 |
| 75   | 625.0                   | 360.6  | 312.5  | 270.8  | 156.3 | 125.0 | 31.3  | 18.0 | 15.6 |
| 100  | 833.3                   | 480.8  | 416.7  | 361.0  | 208.3 | 166.7 | 41.7  | 24.0 | 20.8 |
| 167  | 1391.7                  | 802.9  | 695.8  | 602.9  | 347.9 | 278.3 | 69.6  | 40.1 | 34.8 |
| 250  | 2083.3                  | 1201.9 | 1041.7 | 902.5  | 520.8 | 416.7 | 104.2 | 60.1 | 52.1 |
| 333  | 2775.0                  | 1601.0 | 1387.5 | 1202.2 | 693.8 | 555.0 | 138.8 | 80.0 | 69.4 |

**Note:** Line current = (kVA x 1000) / line voltage.



# Questions to ask

## Step 1

Q

What type of enclosure do you need?

A

- NEMA 1 (general-duty)
- NEMA 3R (rain-tight)
- NEMA 12 (dust-tight)
- NEMA 4X (wash-down)

## Step 2

Q

What type of starter do you need?

A

- NEMA non-combination
- NEMA combination, non-fusible or fusible
- NEMA combination, breaker
- Lighting contactor

## Step 3

Q

What is the horsepower and voltage of the motor?  
(Note: this will determine the NEMA starter size)

A

- Horsepower: 1, 5, 10, 25 hp etc.
- Motor voltage: 200, 230, 460, 575 V

## Step 4

Q

What is the control voltage for the coil?

A

- 120 Vac
- 240 Vac
- 480 Vac

## Step 5

Q

What size overload relay is needed?

A

- 1–5 FLA
- 4–20 FLA
- 9–45 FLA

## Step 6

Q

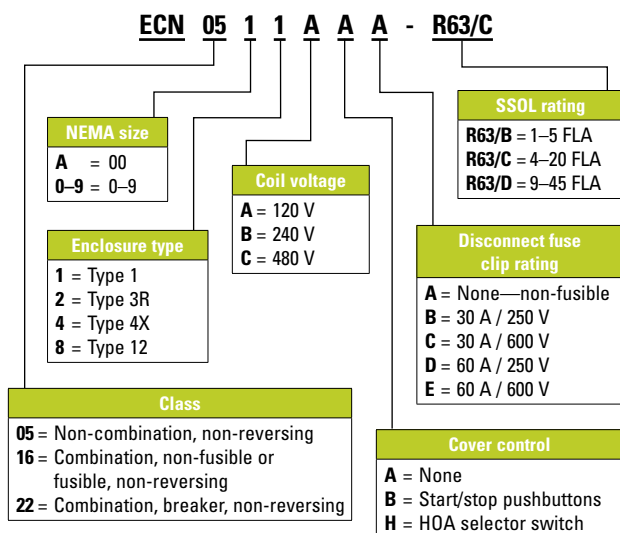
What additional accessories do you need?

A

- Cover control kits, such as HAND/OFF/AUTO selector switch or STOP/START pushbuttons
- CPT kits
- Fuse kits

# Enclosed control

## Catalog numbering system—non-combination and combination NEMA enclosed starters



## Starters

### NEMA non-combination, non-reversing starters, Type 1

| NEMA size | Motor voltage | Maximum hp rating | Magnet coil voltage | SSOL range | Catalog number   |
|-----------|---------------|-------------------|---------------------|------------|------------------|
| 00        | 200, 230      | 1-1/2             | 120                 | 1–5        | ECN05A1AAA-R63/B |
|           | 460           | 2                 | 120                 | 1–5        | ECN05A1AAA-R63/B |
| 0         | 200, 230      | 3                 | 120                 | 1–5        | ECN0501AAA-R63/B |
|           | 460           | 5                 | 120                 | 1–5        | ECN0501AAA-R63/B |
|           | 200, 230      | 3                 | 120                 | 4–20       | ECN0501AAA-R63/C |
|           | 460           | 5                 | 120                 | 4–20       | ECN0501AAA-R63/C |
| 1         | 200, 230      | 7-1/2             | 120                 | 4–20       | ECN0511AAA-R63/C |
|           | 460           | 10                | 120                 | 4–20       | ECN0511AAA-R63/C |
| 2         | 200, 230      | 10                | 120                 | 9–45       | ECN0521AAA-R63/D |
|           | 460           | 25                | 120                 | 9–45       | ECN0521AAA-R63/D |

### NEMA combination, non-reversing starters, non-fusible disconnect Type 1

| NEMA size | Motor voltage | Maximum hp rating | Magnet coil voltage | SSOL range | Catalog number   |
|-----------|---------------|-------------------|---------------------|------------|------------------|
| 00        | 200, 230      | 1-1/2             | 120                 | 1–5        | ECN16A1AAA-R63/B |
|           | 460           | 2                 | 120                 | 1–5        | ECN16A1AAA-R63/B |
| 0         | 200, 230      | 3                 | 120                 | 1–5        | ECN1601AAA-R63/B |
|           | 460           | 5                 | 120                 | 1–5        | ECN1601AAA-R63/B |
|           | 200, 230      | 3                 | 120                 | 4–20       | ECN1601AAA-R63/C |
|           | 460           | 5                 | 120                 | 4–20       | ECN1601AAA-R63/C |
| 1         | 200, 230      | 7-1/2             | 120                 | 4–20       | ECN1611AAA-R63/C |
|           | 460           | 10                | 120                 | 4–20       | ECN1611AAA-R63/C |
| 2         | 200, 230      | 10                | 120                 | 9–45       | ECN1621AAA-R63/D |
|           | 460           | 25                | 120                 | 9–45       | ECN1621AAA-R63/D |

## Starters

### NEMA enclosures with CPT modifications

To order an enclosure with CPT:

1. Change ECN05 to ECN07 for non-combination units, and ECN16 to ECN18 for combination units.
2. Change the “A” in the 7th catalog string to the correct letter based on the below table:

| Catalog string letter | Primary                         | Secondary     |
|-----------------------|---------------------------------|---------------|
| E                     | 208/60                          | 120/60        |
| B                     | 240/480–220/440 wired for 240 V | 120/60–110/50 |
| C                     | 240/480–220/440 wired for 480 V | 120/60–110/50 |

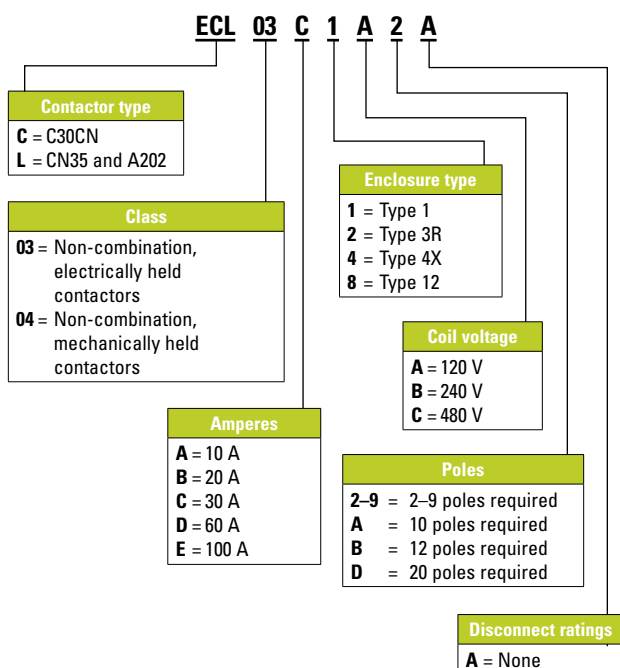
### NEMA accessories—CPT and fuse kits

| Description                                                         | Catalog number     |
|---------------------------------------------------------------------|--------------------|
| 100 VA CPT kit (208/277 V primary, 120 V secondary)                 | <b>C341CE</b>      |
| 100 VA CPT kit (240/480 V primary, 120 V secondary)                 | <b>C341CC</b>      |
| Fuse clip kit for combination starter—30 A / 250 V                  | <b>C351KC21</b>    |
| Fuse clip kit for combination starter—30 A / 600 V and 60 A / 250 V | <b>C351KD22-61</b> |

### NEMA accessories—cover control kits

| Description                                                   | Catalog number                    |                                  |                                            |
|---------------------------------------------------------------|-----------------------------------|----------------------------------|--------------------------------------------|
|                                                               | Non-combination Type 1, size 00–2 | Non-combination Type 1, size 3–5 | Combination Type 1 and all Type 3R, 12, 4X |
| STOP/START pushbuttons                                        | <b>C600M1</b>                     | <b>C400GK1</b>                   | <b>C400T1</b>                              |
| STOP/START pushbuttons with red RUN light (85–264 Vac)        | <b>C600M101A</b>                  | <b>C400GK12</b>                  | —                                          |
| HAND/OFF/AUTO selector switch                                 | <b>C600M12</b>                    | <b>C400GK3</b>                   | <b>C400T12</b>                             |
| HAND/OFF/AUTO selector switch with red RUN light (85–264 Vac) | <b>C600M121A</b>                  | <b>C400GK32</b>                  | —                                          |

## Catalog numbering system—enclosed lighting contactors



## Lighting contactors

### Lighting non-combination contactors, Type 1

| Contactor type           | Number of poles | Ampere rating | Coil voltage | Catalog number    |
|--------------------------|-----------------|---------------|--------------|-------------------|
| C30CN, electrically held | 2               | 30            | 120          | <b>ECC03C1A2A</b> |
| C30CN, electrically held | 4               | 30            | 120          | <b>ECC03C1A4A</b> |
| C30CN, electrically held | 6               | 30            | 120          | <b>ECC03C1A6A</b> |
| CN35, electrically held  | 2               | 20            | 120          | <b>ECL03B1A2A</b> |
| CN35, electrically held  | 4               | 20            | 120          | <b>ECL03B1A4A</b> |
| CN35, electrically held  | 6               | 20            | 120          | <b>ECL03B1A6A</b> |

# Questions to ask

## Step

1

Q

Do you need an assembled pushbutton station or loose components in clam-shell packaging?

A

- Assembled pushbutton station
- Loose components in clam-shell package

## Step

2

For pushbutton stations

Q

What size of pushbutton station do you need?

A

- 22 mm
- 30 mm

Q

How many elements (operators) do you want?

A

- 1
- 2
- 3

## Step

3

For loose components

Q

What type of operator do you need?

A

- Emergency stop operator
- Momentary pushbutton
- Indicating light
- Illuminated pushbutton
- Selector switches

# Pushbutton stations and pushbuttons

## Pushbutton stations

### 30 mm pushbutton stations

| Description                                          | Catalog number    |
|------------------------------------------------------|-------------------|
| <b>Single-element</b>                                |                   |
| Emergency Off—break glass pushbutton station, NC     | <b>10250TGR</b>   |
| Man-Off-Auto selector switch pushbutton station, 2NO | <b>10250T3524</b> |
| Stop mushroom head pushbutton station, 1NC           | <b>10250T3519</b> |
| <b>Two-element</b>                                   |                   |
| Start-Stop pushbutton station, 1NO-2NC               | <b>10250T3525</b> |
| Start-Stop rectangular pushbutton station, 1NO-1NC   | <b>10250H5200</b> |
| <b>Three-element</b>                                 |                   |
| Open-Close-Stop pushbutton station, 2NO-3NC          | <b>10250T3614</b> |
| Up-Down-Stop rectangular pushbutton station, 2NO-1NC | <b>10250H5301</b> |

### 22 mm pushbutton stations

| Description                                                                          | Catalog number    |
|--------------------------------------------------------------------------------------|-------------------|
| <b>Single-element</b>                                                                |                   |
| 40 mm mushroom head push-pull emergency stop operator, NC                            | <b>M22-C1-M1H</b> |
| 40 mm illuminated mushroom head push-pull emergency stop operator, 85–264 Vac, NO-NC | <b>M22-C1-M2H</b> |
| <b>Two-element</b>                                                                   |                   |
| Flush pushbutton, Start-Stop, NO-NC                                                  | <b>M22-C2-M2V</b> |
| Flush pushbutton, Forward-Reverse, 2NO                                               | <b>M22-C2-M3V</b> |
| <b>Three-element</b>                                                                 |                   |
| Flush pushbutton, Open-Stop-Close, 2NO-1NC                                           | <b>M22-C3-M4V</b> |
| Flush pushbutton, Forward-Stop-Reverse, 2NO-1NC                                      | <b>M22-C3-M5V</b> |
| Flush pushbutton, Up-Stop-Down, 2NO-NC                                               | <b>M22-C3-M6V</b> |

## Pushbutton components

### Individually packaged 30 mm pushbuttons and operators NEMA 4, 4X, 12 13

| Description                                                                                                                      | Catalog number     |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>Emergency stop operator</b>                                                                                                   |                    |
| Red non-illuminated push-pull, 1NO-1NC, includes 2 legend plates: EMERG. STOP and STOP                                           | 10250T5B62-1-POP   |
| Jumbo mushroom pushbutton, 1NO-1NC, button engraved EMERG. STOP (button is engraved—no legend plate provided)                    | 10250T33-POP       |
| Red mushroom pushbutton engraved EMERG. STOP, 1NO-1NC, includes 2 legend plates: EMERG. STOP and STOP                            | 10250T32R-POP      |
| <b>Momentary pushbutton</b>                                                                                                      |                    |
| Black flush pushbutton, 1NO-1NC, includes 1 legend plate: START and JOG                                                          | 10250T30B-POP      |
| Red extended pushbutton, 1NO-1NC, includes 1 legend plate: STOP                                                                  | 10250T31R-POP      |
| <b>Indicating light</b>                                                                                                          |                    |
| Red indicating light transformer 120 Vac with two extra lenses (green and amber), 1NO-1NC, includes 2 legend plates: RUN and JOG | 10250T34R-POP      |
| <b>Illuminated pushbutton</b>                                                                                                    |                    |
| Red illuminated pushbutton (120 Vac/Vdc),with 2 extra lenses (green and amber), 1NO-1NC, includes 1 legend plate: Power On       | 10250T411C21-1-POP |
| <b>Selector switches</b>                                                                                                         |                    |
| Two-position selector switch, 1NO-1NC, includes 3 legend plates: Off/On, Hand/Auto and Run/Jog                                   | 10250T20KB-POP     |
| Three-position selector switch, 2NO-2NC, includes 1 legend plate: Hand/Off/Auto                                                  | 10250T22KB-POP     |
| Three-position selector switch, 1NO-1NC, includes 1 legend plate: Hand/Off/Auto                                                  | 10250T21KB-POP     |

# Questions to ask

## Step

1

Q

What is the motor nameplate information?

A

- System (AC or DC) and voltage?
- If AC, is the motor single-phase or three-phase?
- What is the motor horsepower?

## Step

2

Q

What type of enclosure is needed?

A

- No enclosure (will be mounted in separate enclosure)
- NEMA 1 enclosure

## Step

3

Q

Is overload protection required?

A

- No
- Yes. If yes, what is the motor full load amperes (FLA)?

## Step

4

Q

What type of operator does the customer want?

A

- Button
- Toggle

# Manual starters



## Manual starters

### Manual motor switches without overload

| Type  | Pole config. | Maximum motor (hp) |       |       |       | Catalog number |          |
|-------|--------------|--------------------|-------|-------|-------|----------------|----------|
|       |              | 120 V              | 240 V | 480 V | 230 V | Open           | Enclosed |
| B230A | Two-pole     | 2                  | 5     | —     | —     | B230AN         | B230AG   |
| B230B | Two-pole     | 2                  | 5     | 10    | 15    | B230BND        | B230BGD  |
|       | Three-pole   | 3                  | 7.5   | 15    | 20    | B330AND        | B330AGD  |

### Single-phase manual starters with overload protection— Type MS series starters ❶

| Pole config. | Maximum motor (hp) |         |         | Catalog number |            |
|--------------|--------------------|---------|---------|----------------|------------|
|              | AC voltage         |         |         |                |            |
|              | 120 Vac            | 240 Vac | 277 Vac | Open           | Enclosed ② |
| Single-pole  | 1                  | 1       | 1       | MST01          | MST01SN1P  |
| Two-pole     | 1                  | 1       | 1       | MST02          | MST02SN1P  |

| Pole<br>config. | Maximum motor (hp) |         |        | Catalog number |            |
|-----------------|--------------------|---------|--------|----------------|------------|
|                 | DC voltage         |         |        |                |            |
|                 | 120 Vdc            | 240 Vdc | 32 Vdc | Open           | Enclosed ② |
| Single-pole     | ¼                  | ¼       | ¼      | MST01          | MST01SN1P  |
| Two-pole        | ¼                  | ¼       | ¼      | MST02          | MST02SN1P  |

❶ Use MSH heaters for MS series starters.

❷ With pilot light.

### Single- and three-phase manual starters with overload protection— Type B100 ❶

| Pole config.             | NEMA size | Maximum motor (hp) |             |             | Catalog number |            |
|--------------------------|-----------|--------------------|-------------|-------------|----------------|------------|
|                          |           | AC voltage         |             |             | Open           | Enclosed ❷ |
|                          |           | 120 Vac            | 208–240 Vac | 480–600 Vac |                |            |
| Two-pole (single-phase)  | 0         | 1                  | 2           | —           | B100M0B        | B100S0B    |
|                          | 1         | 2                  | 3           | —           | B100M1B        | B100S1B    |
| Three-pole (three-phase) | 0         | 2                  | 3           | 5           | B100M0C        | B100S0C    |
|                          | 1         | 3                  | 7½          | 10          | B100M1C        | B100S1C    |

| Pole config.             | NEMA size | Maximum motor (hp) |         | Catalog number |            |
|--------------------------|-----------|--------------------|---------|----------------|------------|
|                          |           | DC voltage         |         | Open           | Enclosed ❷ |
|                          |           | 115 Vdc            | 230 Vdc |                |            |
| Two-pole (single-phase)  | 0         | 1                  | 1½      | B100M0B        | B100S0B    |
|                          | 1         | 1½                 | 2       | B100M1B        | B100S1B    |
| Three-pole (three-phase) | 0         | —                  | —       | B100M0C        | B100S0C    |
|                          | 1         | —                  | —       | B100M1C        | B100S1C    |

❶ Use FH heaters for Type B100 starters.

❷ NEMA 1.

# Questions to ask

## Step

1

**Q** Application?

- A**
- Service entrance (contact Eaton)
  - Distribution panel
  - Control panel

## Step

2

**Q** kA rating per phase?

- A**
- 50 kA
  - 100 kA
  - Greater than 100 kA

## Step

3

**Q** How many phases?

- A**
- Single-phase
  - Three-phase

## Step

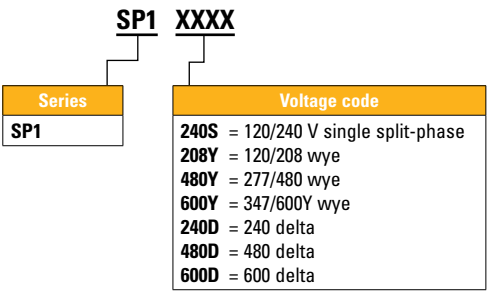
4

**Q** System voltage?

- A**
- See voltage codes in unit configuration tables

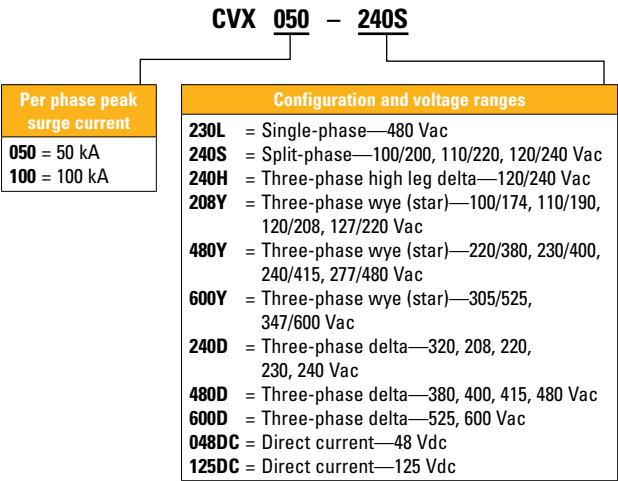
# Surge protection

Catalog numbering system—SP1



**Note:** SP1MNTGKIT = optional wall or DIN rail mounting kit (order separately—not included with SP1 unit)

Catalog numbering system—CVX



## Distribution panel surge protection

| Peak surge current (kA) | Phase  | Voltage   | Catalog number |
|-------------------------|--------|-----------|----------------|
| 50                      | Single | 120/240   | CVX050-240S    |
| 100                     | Single | 120/240   | CVX100-240S    |
| 50                      | Three  | 208Y/120  | CVX050-208Y    |
| 100                     | Three  | 208Y/120  | CVX100-208Y    |
| 50                      | Three  | 240 delta | CVX050-240D    |
| 100                     | Three  | 240 delta | CVX100-240D    |
| 50                      | Three  | 480 delta | CVX050-480D    |
| 100                     | Three  | 480 delta | CVX100-480D    |
| 50                      | Three  | 480Y/277  | CVX050-480Y    |
| 100                     | Three  | 480Y/277  | CVX100-480Y    |

## CVX accessories

| Description            | Catalog number |
|------------------------|----------------|
| External mounting feet | MNTGFTX        |

## Control panel surge protection

| Peak surge current (kA) | Phase  | Voltage   | Catalog number |
|-------------------------|--------|-----------|----------------|
| 50                      | Single | 120/240   | SP1-240S       |
| 50                      | Three  | 208Y/120  | SP1-208Y       |
| 50                      | Three  | 240 delta | SP1-240D       |
| 50                      | Three  | 480 delta | SP1-480D       |
| 50                      | Three  | 480Y/277  | SP1-480Y       |

## SP1 accessories

| Description                            | Catalog number |
|----------------------------------------|----------------|
| Optional wall or DIN rail mounting kit | SP1MNTGKIT     |

Call 877-ETN-CARE (877-386-2273)

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Printed in USA  
Publication No. CA08307001E / Z18522  
August 2016



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