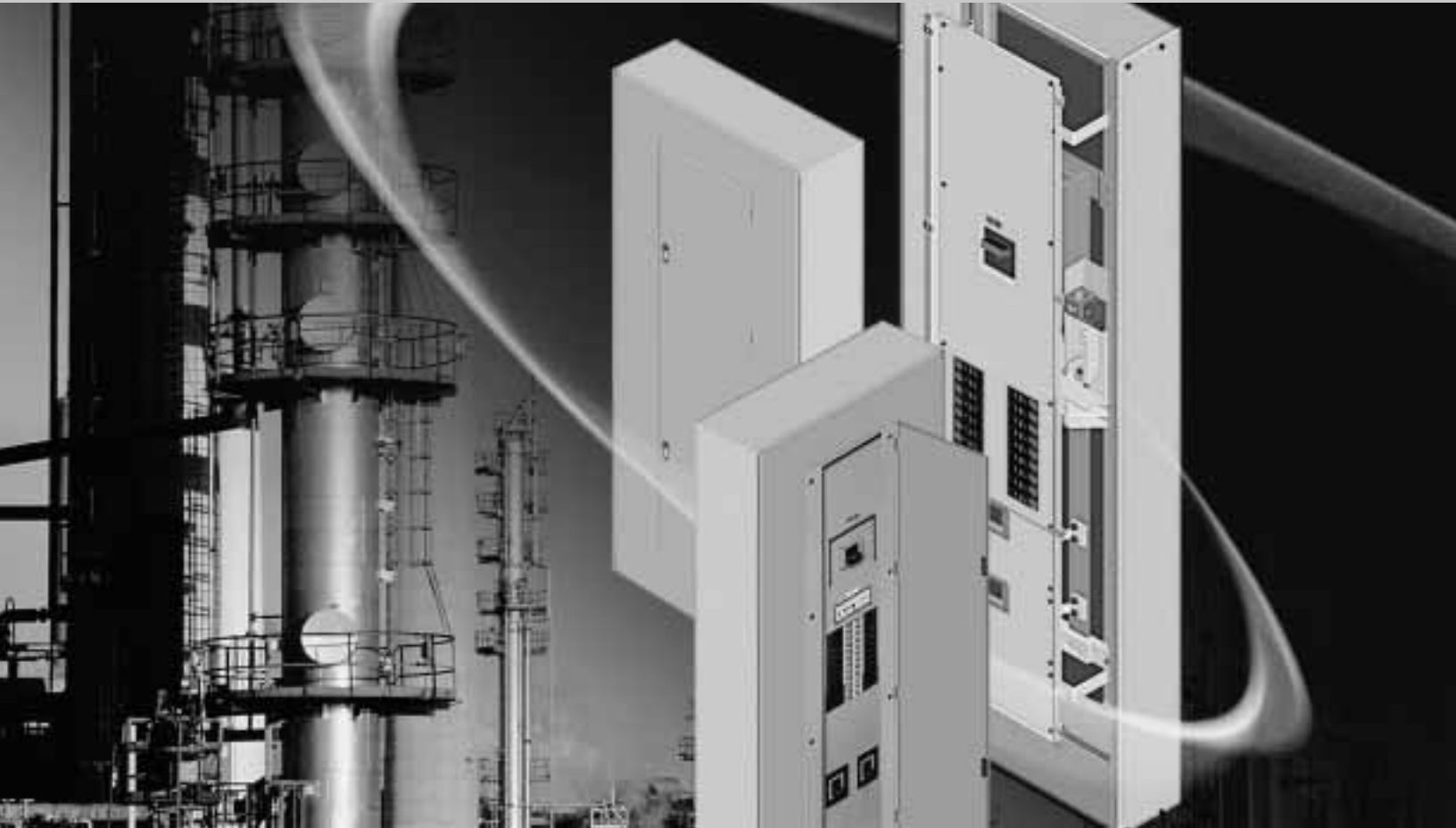


P2 PANELBOARDS SELECTION & APPLICATION GUIDE



2004

P2 Panelboards



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Flexibility is the hallmark of the P2 panel. This panel offers a wide array of factory-assembled options to meet almost all lighting panel applications. With this design, the ability to mix breaker frames in unit space up to 250 amps will also meet many distribution panel requirements in a much smaller package. Busing options for the P2 vary from the typical temperature rated to 750 A/Si aluminum to 1000A/Si copper. Standard busing in the P2 panel is tin-plated. Silver-plated copper is also offered as an option. Integrated time clocks, bus mounted contactors, as mains or sub mains, split bus, and subfeed lugs (up to 400 amp) are just a few of the options of this unique panel.

Like a lighting panel, P2 is set up around 18, 30, 42, and 54 circuit configurations. It will also allow the user to configure the panel to the smallest possible size. The P2 panel starts with 9" of unit space (18 circuits of 1" pole breakers). Breakers mounted in unit space can be mixed and matched to meet customer requirements. All 1" pole breakers (BL, BQD, ED frames) are mounted in 3" or 6" pole increments. Breaker frames, above 125 amps, are mounted in 6" single breaker mountings. As an example of a minimum panel, (6) 20 amp 1-pole BL breakers (3" of unit space) and a 3-pole 225 amp QJ breaker (6" of unit space) equaling 9" of unit space can be configured in a P2 panel without any extra provisions or space required. FD 250 amp and JD 400 amp breakers are mounted as subfeed breakers outside of unit space.

Another unique feature of the P2 panel is that blank unit space can be added to allow for future expansions or modifications. Any expansions or modifications must be in 3" increments. BL, BQD, and ED frame breakers have 3" or 6" pole kits, and can be mixed in unit space by these increments. Breakers of the same frame can cross from one mounting to another if contiguous. QJ frame breakers are mounted in 6" increments for two and three pole, single mounted units. Changes in the unit space length for BL, BQD, or ED frame breakers require an addition deadfront, center strip kit. Check with sales or the factory for additional unit space kits.

Main Lug / Main Breaker

Enclosure – Standard Type 1 enclosure is 20" wide x 5.75" deep X. Box Height is determined by main device and unit space. See charts for box height.

Voltage – 600 Vac Max.
250 Vdc Max.

Amperage – 600 amp Max.

Short circuit rating – 200 KAIC Max. symmetrical or equal to the lowest rated device installed unless a series rating is indicated. Panels with subfeed or feed-thru lugs without a main device, circuit breaker or fusible unit, are limited to a three-cycle rating. The three-cycle rating for the P2 panel is limited to 22 KAIC. Note that the main device may be mounted remote from the panel.

Busing – The P2 panel has more options to meet market requirements. The standard busing is temperature rated aluminum. The rating is per the requirements of CSA: 22.2 No. 29 – the standard for panelboards. All aluminum busing is tin-plated. Optional busing for the P2 panel is: 750 A/Si aluminum, temperature rated copper, and 1000 A/Si copper. The copper bus option for this panel is tin-plated.

Weight – Approximate

Total panelboard weight when filled with a normal quantity of breakers and accessories is about 3 lbs. (1 kg) per inch (54g per mm) of box height.

Table P2-1 – Gauge Steel of Boxes Fronts, Surface and Flush

| Dimensions in inches (mm) | | Gauge Steel | |
|---------------------------|-------------|-------------|-------|
| Width | Height | Box | Front |
| 20" | 26 - 74 | #16 | #14 |
| (508) | (660, 1880) | | |

Selection and Application

Step 1

Determine configuration required.

Example:
 Amperage 250A
 Voltage 208Y/120V
 System 3Ø4W
 Main Main Lug
 Bus Material Temperature rated aluminum
 Interrupt Rating 10 Ka
 Branch Devices (6) 20 amp, 1-pole
 (1) 225 amp, 3-pole
 Feed Location Top
 Mounting Surface

Step 2

Create a catalogue number by following the Catalogue Numbering System on page 6. Note that the number of circuits number (4th and 5th position) will be 18 for those panels with 6-18 circuits, 30 for those panels with 19-30 circuits, 42 for those panels 31 to 42 circuits and 54 for those panels 43 to 54 circuits. The most cost effective 20 amp 1-pole breaker for this application would be BL. However, a myriad of other breakers with options may be used in the P2 panel. The most cost effective 225 amp breaker for this application is the QJ2.

Based on the above
 P2C18ML250ATS
 (6) BL 20 amp 1-Pole
 (1) QJ2 225 amp 3-pole

Step 3

Determine the enclosure size. The matrix on page 2-3 shows the enclosure sizes based on the amperage, main device and unit space required.

Table P2-2 – Panel Unit Space To Box Height Requirements

| "B" Dimension Box Height | P2 Panels With Standard Line Lugs. Unit Space (starting with 9" and adding 6" increments) "A" Dimension | | | | | | | | | | | | | |
|--------------------------|---|------|------|------|-----------------------|-----------------|---------------|----------------|----------------|----------------|---------|----------|---------|----------|
| | Main Lugs | | | | Main Breakers | | | | | | | | | |
| | 125A | 250A | 400A | 600A | 125A Horiz. BL,BQD,ED | 125A Horiz. CED | 125A Vert. ED | 225A Horiz. QJ | 250A Horiz. FD | 250A Vert. CFD | 400A JD | 400A CJD | 600A LD | 600A CLD |
| 26 | 9 | — | — | — | 9 | — | — | — | — | — | — | — | — | — |
| 32 | 15 | 9 | — | — | 15 | 9 | 9 | 9 | — | — | — | — | — | — |
| 38 | 21 | 15 | 9 | 9 | 21 | 15 | 15 | 15 | 9 | — | — | — | — | — |
| 44 | 27 | 21 | 15 | 15 | 27 | 21 | 21 | 21 | 15 | — | — | — | — | — |
| 50 | 33 | 27 | 21 | 21 | 33 | 27 | 27 | 27 | 21 | 9 | 9 | — | — | — |
| 56 | 39 | 33 | 27 | 27 | 39 | 33 | 33 | 33 | 27 | 15 | 15 | — | 9 | — |
| 62 | 45 | 39 | 33 | 33 | 45 | 39 | 39 | 39 | 33 | 21 | 21 | 9 | 15 | 9 |
| 68* | 51* | 45 | 39 | 39 | 51* | 45 | 45 | 45 | 39 | 27 | 27 | 15 | 21 | 15 |
| 74* | 57* | 51* | 45 | 45 | 57* | 51* | 51* | 51* | 45 | 33 | 33 | 21 | 27 | 21 |

Table P2-3 – Main Breaker (Fig. P2-1)

| Panel Amps | Breaker Frames | C | D |
|------------|----------------|-------|-------|
| 100 | BL | 5.75 | 8.00 |
| | BQD | 5.125 | 8.00 |
| 125 | ED | 4.00 | 8.00 |
| 225 | QJ | 5.00 | 7.00 |
| 250 | FD | 5.00 | 7.00 |
| 400 | JD | 14.00 | 25.00 |
| 600 | LD | 15.50 | 23.00 |

Table P2-4 – Main Lug Connectors (Fig. P2-2)

| Panel Amps | Standard Connectors | C | D |
|------------|---|-------|-------|
| 125 | (1) #14 - 2/0 | 6.62 | 8.19 |
| 250 | (1) #6 AWG - 350 Kcmil | 12.34 | 11.22 |
| 400 | (1) #4 AWG - 600 Kcmil or (2) #6 - 250 Kcmil | 14.00 | 13.09 |
| 600 | (2) #4 AWG - 500 Kcmil | 14.00 | 11.00 |

Fig. P2-1

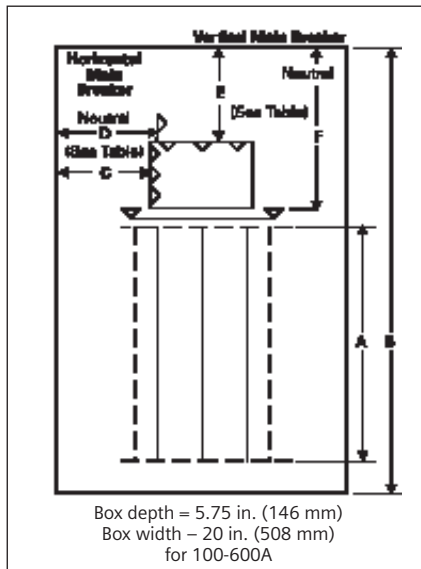


Fig. P2-2

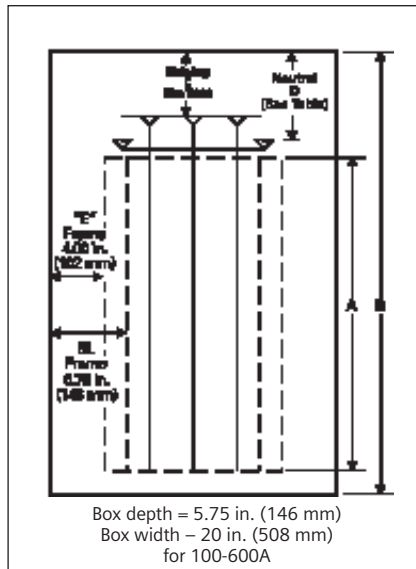
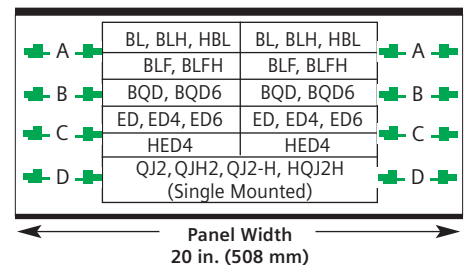


Table P2-5 – Branch Breaker Side Gutters Inches (mm) (Fig. P2-3)

| Reference Letter | Panel Width 20" (508) |
|------------------|-----------------------|
| A | 5.750 (146) |
| B | 5.125 (130) |
| C | 4.000 (102) |
| D ¹ | 5.000 (127) |

¹ Single branch mounting construction.

Fig. P2-3



*Contact local Siemens representative before ordering.

Table P2-6 – Main Breaker Selection ¹

| Ampere Rating | Breaker Type | Maximum Interrupting Rating (kA) | | | Available Trip Values |
|---------------|-----------------------|----------------------------------|------|------|---|
| | | 240V | 480V | 600V | |
| 100 | BL (STD) | 10 | — | — | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
| | HBL | 65 | 14 | — | |
| | BQD (STD 480/277 Vac) | 65 | 18 | — | |
| | ED4 | 65 | 25 | — | |
| | ED6 | 100 | 42 | 18 | |
| | HED4 | 100 | 65 | — | |
| | CED6 | 200 | 200 | 100 | |
| 125 | ED4 (STD) | 65 | 18 | — | 125 |
| | ED6 | 65 | 25 | 18 | |
| | HED4 | 100 | 42 | — | |
| | CED6 | 200 | 200 | 100 | |
| 225 | QJ2 (STD) | 10 | — | — | 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
| | QJH2 | 22 | — | — | |
| | QJ2H | 42 | — | — | |
| | FD6, FXD6 | 65 | 35 | 18 | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
| | HFD6, HFXD6 | 100 | 65 | 25 | |
| | CFD6 | 200 | 150 | 100 | |
| 250 | FD6, FXD6 (STD) | 65 | 35 | 18 | 250 |
| | HFD6, HFXD6 | 100 | 65 | 25 | |
| | CFD6 | 200 | 150 | 100 | |
| 400 | JXD6 (STD), JD6 | 65 | 35 | 25 | 200, 225, 250, 300, 350, 400 |
| | HJD6, HJXD6 | 100 | 65 | 35 | 200, 225, 250, 300, 350, 400 |
| | SJD6 | 65 | 35 | 25 | 200, 300, 400 |
| | CJD6, SCJD6 | 200 | 200 | 100 | 200, 300, 400 |
| 600 | LXD6 (STD) | 65 | 35 | 25 | 450, 500, 600 |
| | LD6 | 65 | 35 | 25 | 250, 300, 350, 400, 450, 500, 600 |
| | HLD6, HLXD6 | 100 | 65 | 35 | 250, 300, 350, 400, 450, 500, 600 |
| | SLD6, | 65 | 35 | 25 | 300, 400, 500, 600 |
| | SHLD6 | 100 | 65 | 35 | 300, 400, 500, 600 |
| | CLD6, SCLD6 | 200 | 150 | 100 | 300, 400, 500, 600 |

¹ Interchangeable trip main breakers are mounted at top of panel only.

Table P2-7 – Subfeed Breakers

| Breaker Type | Mounting Position When Used As Subfeed Breaker | Maximum Interrupting Rating (kA) Symmetrical | 240V AC | 480V AC | 600V DC |
|---------------------------|--|--|---------|---------|---------|
| | Vertical | Ampere Ratings For Load | | | |
| FD6 ¹ , FXD6 | Twin | 70 - 250 | 65 | 35 | 18 |
| HFD6 ¹ , HFXD6 | Twin | 70 - 250 | 100 | 65 | 25 |
| JD6 ² , JXD6 | Single | 200 - 400 | 65 | 35 | 25 |
| HJD6 ² , HJXD6 | Single | 200 - 400 | 100 | 65 | 35 |

¹ Twin mounted subfeed breakers are mounted at bottom of panelboard only and adds 24" to the panel height.

² Subfeed breaker is mounted at bottom of panelboard only. 400 amp subfeed breaker adds 30" to the panel height.

Table P2-8 – Branch Circuit Breakers

| Max. Amp Rating | Bolt-On Breaker Type | No. of Poles | Amp Rating | Maximum Interrupting Rating (kA) | | | | | | |
|-----------------|----------------------|--------------|------------|----------------------------------|---------|-----|-----|-----|---------|-----|
| | | | | Volts – AC | | | | | | DC |
| | | | | 120 | 120/240 | 240 | 277 | 480 | 600 | 250 |
| 100 | BL | 1 | 15 - 70 | 10 | — | — | — | — | — | — |
| | | 2 | 15 - 100 | — | 10 | — | — | — | — | — |
| | | 3 | 15 - 100 | — | — | 10 | — | — | — | — |
| | BL, HID | 1 | 15 - 30 | 10 | — | — | — | — | — | — |
| | | 2 | 15 - 30 | — | 10 | — | — | — | — | — |
| | BLR | 2 | 15 - 100 | — | — | 10 | — | — | — | — |
| | BLE | 1 | 15 - 30 | 10 | — | — | — | — | — | — |
| | | 2 | 15 - 60 | — | 10 | — | — | — | — | — |
| | BLEH | 1 | 15 - 30 | 22 | — | — | — | — | — | — |
| | | 2 | 15 - 60 | — | 22 | — | — | — | — | — |
| | BLF | 1 | 15 - 30 | 10 | — | — | — | — | — | — |
| | | 2 | 15 - 60 | — | 10 | — | — | — | — | — |
| | BLHF | 1 | 15 - 30 | 22 | — | — | — | — | — | — |
| | | 3 | 15 - 60 | — | 22 | — | — | — | — | — |
| | | | | | | | | | | |
| | BGL 1 | 2 | 15 - 30 | 10 | — | — | — | — | — | — |
| | | 3 | 15 - 30 | — | 10 | — | — | — | — | — |
| | BAF | 1 | 15, 20 | 10 | — | — | — | — | — | — |
| | BAFH | 1 | 15, 20 | 22 | — | — | — | — | — | — |
| | BLH | 1 | 15 - 70 | — | 22 | — | — | — | — | — |
| 2 | | 15 - 100 | — | 22 | — | — | — | — | — | |
| 3 | | 15 - 100 | — | — | 22 | — | — | — | — | |
| HBL | 1 | 15 - 70 | — | 65 | — | — | — | — | — | |
| | 2 | 15 - 100 | — | 65 | — | — | — | — | — | |
| | 3 | 15 - 100 | — | — | 65 | — | — | — | — | |
| BQD | 1 | — | — | 65 | — | 14 | — | — | 14 | |
| | 2 | 15 - 100 | — | 65 | — | — | 14 | — | 14 | |
| | 3 | — | — | — | 65 | — | 14 | — | 14 | |
| 125 | ED2 | 1 | 15 - 100 | 10 | — | — | — | — | — | |
| | | 2/3 | — | 10 | — | — | — | — | 5 (2-P) | |
| | ED4 | 1 | 15 - 125 | 65 | — | — | 22 | — | — | |
| | | 2 | — | — | — | 65 | — | 18 | — | |
| | | 3 | — | — | — | 65 | — | 18 | — | |
| | ED6 | 2 | 15 - 125 | — | — | 65 | — | 25 | 18 | |
| | | 3 | — | — | — | 65 | — | 25 | 18 | |
| | *CED6 | 1 | — | — | — | — | — | — | — | |
| | | 2 | 15 - 125 | — | 200 | 200 | 200 | 200 | 100 | |
| | | 3 | — | — | 200 | 200 | 200 | 200 | 100 | |
| 225 | QJ2 | 2/3 | 60 - 225 | — | — | 10 | — | — | — | |
| | QJH2 | 2/3 | 60 - 225 | — | — | 22 | — | — | — | |
| | QJ2-H | 2/3 | 60 - 225 | — | — | 42 | — | — | — | |
| | HQJ2H | 2/3 | 100 - 225 | — | — | 100 | — | — | — | |

1. Two pole breaker is one phase and neutral. Three pole is two phase and neutral.
NOTE: QJ Breakers are single mounted in unit space and take 6" of unit space. Limited to (3) per panel max. BL, HBL, BLH and BQD breakers are mounted in

common mountings in 3" or (6) pole increments. ED2, ED4, ED6 and HED4 breakers are mounted in common mountings in 3" or (6) pole increments.

Branch Device Limitations

For panels applied on systems requiring neutral connections, some limitations apply. By application rule (NEC 480.14) lighting and appliance panels are limited to 42 circuits installed. Each overcurrent device pole counts as a circuit. Additional limitations for these panels are based on available neutral connections.

*Contact local Siemens representative before ordering.

Table P2-9 – Branch Neutral Connections

| Wire Range | Max. Number of Connections | Max. Amps ¹ |
|--------------------------------------|----------------------------|------------------------|
| #14-#6 | 26 | 65 |
| #14-1/0 | 28 | 125 |
| #6 - 350 Kcmil | 3 | 250 |
| (1) #4-600 Kcmil or (2) #6-250 Kcmil | 1 | 400 |

¹ Based on 75 degree copper.

Table P2-10 – Main Lugs Only (1)(2)(4)(5)

| Maximum Panel Amp Rating | Maximum 1-Pole Circuits (6) | Box Height inches (mm) | Catalogue Number (2) | | | |
|--------------------------|-----------------------------|------------------------|----------------------|---------------|---------------|---------------|
| | | | 3Ø4W 208Y/120V | 1Ø3W 120/240V | 3Ø4W 480Y/27V | 3Ø4W 347/600V |
| 125 | 18 | 26 | P2C18ML125ATS | P2A18ML125ATS | P2E18ML125ATS | P2L18ML125ATS |
| | 30 | 32 | P2C30ML125ATS | P2A30ML125ATS | P2E30ML125ATS | P2L30ML125ATS |
| | 42 | 38 | P2C42ML125ATS | P2A42ML125ATS | P2E42ML125ATS | P2L42ML125ATS |
| | 54 | 44 | P2C54ML125ATS | P2A54ML125ATS | P2E54ML125ATS | P2L54ML125ATS |
| | 66 | 50 | P2C66ML125ATS | P2A66ML125ATS | P2E66ML125ATS | P2L66ML125ATS |
| | 78 | 56 | P2C78ML125ATS | P2A78ML125ATS | P2E78ML125ATS | P2L78ML125ATS |
| | 90 | 62 | P2C90ML125ATS | P2A90ML125ATS | P2E90ML125ATS | P2L90ML125ATS |
| 250 | 18 | 32 | P2C18ML250ATS | P2A18ML250ATS | P2E18ML250ATS | P2L18ML250ATS |
| | 30 | 38 | P2C30ML250ATS | P2A30ML250ATS | P2E30ML250ATS | P2L30ML250ATS |
| | 42 | 44 | P2C42ML250ATS | P2A42ML250ATS | P2E42ML250ATS | P2L42ML250ATS |
| | 54 | 50 | P2C54ML250ATS | P2A54ML250ATS | P2E54ML250ATS | P2L54ML250ATS |
| | 66 | 56 | P2C66ML250ATS | P2A66ML250ATS | P2E66ML250ATS | P2L66ML250ATS |
| | 78 | 62 | P2C78ML250ATS | P2A78ML250ATS | P2E78ML250ATS | P2L78ML250ATS |
| | 90 | 68 | P2C90ML250ATS | P2A90ML250ATS | P2E90ML250ATS | P2L90ML250ATS |
| 400 | 18 | 38 | P2C18ML400ATS | P2A18ML400ATS | P2E18ML400ATS | P2L18ML400ATS |
| | 30 | 44 | P2C32ML400ATS | P2A32ML400ATS | P2E32ML400ATS | P2L32ML400ATS |
| | 42 | 50 | P2C42ML400ATS | P2A42ML400ATS | P2E42ML400ATS | P2L42ML400ATS |
| | 54 | 56 | P2C54ML400ATS | P2A54ML400ATS | P2E54ML400ATS | P2L54ML400ATS |
| | 66 | 62 | P2C66ML400ATS | P2A66ML400ATS | P2E66ML400ATS | P2L66ML400ATS |
| | 78 | 68 | P2C78ML400ATS | P2A78ML400ATS | P2E78ML400ATS | P2L78ML400ATS |
| | 90 | 74 | P2C90ML400ATS | P2A90ML400ATS | P2E90ML400ATS | P2L90ML400ATS |
| 600 | 18 | 38 | P2C18ML600ATS | P2A18ML600ATS | P2E18ML600ATS | P2L18ML600ATS |
| | 30 | 44 | P2C30ML600ATS | P2A30ML600ATS | P2E30ML600ATS | P2L30ML600ATS |
| | 42 | 50 | P2C42ML600ATS | P2A42ML600ATS | P2E42ML600ATS | P2L42ML600ATS |
| | 54 | 56 | P2C54ML600ATS | P2A54ML600ATS | P2E54ML600ATS | P2L54ML600ATS |
| | 66 | 62 | P2C66ML600ATS | P2A66ML600ATS | P2E66ML600ATS | P2L66ML600ATS |
| | 78 | 68 | P2C78ML600ATS | P2A78ML600ATS | P2E78ML600ATS | P2L78ML600ATS |
| | 90 | 74 | P2C90ML600ATS | P2A90ML600ATS | P2E90ML600ATS | P2L90ML600ATS |

Table P2-11 - Main Circuit Breaker (1)(2)(3)(4)(5)

| Maximum Panel Amp Rating | Maximum 1-Pole Circuits | Box Height inches (mm) | Catalogue Number (2) | | | |
|--------------------------|-------------------------|------------------------|----------------------|---------------|---------------|---------------|
| | | | 3Ø4W 120/208V | 1Ø3W 120/240V | 3Ø4W 277/480V | 3Ø4W 347/600V |
| 100 | 18 | 26 | P2C18BL100ATS | P2A18BL100ATS | P2E18BD100ATS | P2L18BD100ATS |
| | 30 | 32 | P2C30BL100ATS | P2A30BL100ATS | P2E30BD100ATS | P2L30BD100ATS |
| | 42 | 38 | P2C42BL100ATS | P2A42BL100ATS | P2E42BD100ATS | P2L42BD100ATS |
| | 54 | 44 | P2C54BL100ATS | P2A54BL100ATS | P2E54BD100ATS | P2L54BD100ATS |
| | 66 | 50 | P2C66BL100ATS | P2A66BL100ATS | P2E66BD100ATS | P2L66BD100ATS |
| | 78 | 56 | P2C78BL100ATS | P2A78BL100ATS | P2E78BD100ATS | P2L78BD100ATS |
| | 90 | 62 | P2C90BL100ATS | P2A90BL100ATS | P2E90BD100ATS | P2L90BD100ATS |
| 125 | 18 | 26 | P2C18E4125ATS | P2A18E4125ATS | P2E18E4125ATS | P2L18E6125ATS |
| | 30 | 32 | P2C30E4125ATS | P2A30E4125ATS | P2E30E4125ATS | P2L30E6125ATS |
| | 42 | 38 | P2C42E4125ATS | P2A42E4125ATS | P2E42E4125ATS | P2L42E6125ATS |
| | 54 | 44 | P2C54E4125ATS | P2A54E4125ATS | P2E54E4125ATS | P2L54E6125ATS |
| | 66 | 50 | P2C66E4125ATS | P2A66E4125ATS | P2E66E4125ATS | P2L66E6125ATS |
| | 78 | 56 | P2C78E4125ATS | P2A78E4125ATS | P2E78E4125ATS | P2L78E6125ATS |
| | 90 | 62 | P2C90E4125ATS | P2A90E4125ATS | P2E90E4125ATS | P2L90E6125ATS |
| 225 | 18 | 32 | P2C18QJ225ATS | P2A18QJ225ATS | P2E18E4225ATS | P2L18E6225ATS |
| | 30 | 38 | P2C32QJ225ATS | P2A32QJ225ATS | P2E32E4225ATS | P2L32E6225ATS |
| | 42 | 44 | P2C42QJ225ATS | P2A42QJ225ATS | P2E42E4225ATS | P2L42E6225ATS |
| | 54 | 50 | P2C54QJ225ATS | P2A54QJ225ATS | P2E54E4225ATS | P2L54E6225ATS |
| | 66 | 56 | P2C66QJ225ATS | P2A66QJ225ATS | P2E66E4225ATS | P2L66E6225ATS |
| | 78 | 62 | P2C78QJ225ATS | P2A78QJ225ATS | P2E78E4225ATS | P2L78E6225ATS |
| | 90 | 68 | P2C90QJ225ATS | P2A90QJ225ATS | P2E90E4225ATS | P2L90E6225ATS |
| 250 | 18 | 38 | P2C18FX250ATS | P2A18FX250ATS | P2E18FX250ATS | P2L18FX250ATS |
| | 30 | 44 | P2C30FX250ATS | P2A30FX250ATS | P2E30FX250ATS | P2L30FX250ATS |
| | 42 | 50 | P2C42FX250ATS | P2A42FX250ATS | P2E42FX250ATS | P2L42FX250ATS |
| | 54 | 56 | P2C54FX250ATS | P2A54FX250ATS | P2E54FX250ATS | P2L54FX250ATS |
| | 66 | 62 | P2C66FX250ATS | P2A66FX250ATS | P2E66FX250ATS | P2L66FX250ATS |
| | 78 | 68 | P2C78FX250ATS | P2A78FX250ATS | P2E78FX250ATS | P2L78FX250ATS |
| | 90 | 74 | P2C90FX250ATS | P2A90FX250ATS | P2E90FX250ATS | P2L90FX250ATS |
| 400 | 18 | 50 | P2C18JX400ATS | P2A18JX400ATS | P2E18JX400ATS | P2L18JX400ATS |
| | 30 | 56 | P2C32JX400ATS | P2A32JX400ATS | P2E32JX400ATS | P2L32JX400ATS |
| | 42 | 62 | P2C42JX400ATS | P2A42JX400ATS | P2E42JX400ATS | P2L42JX400ATS |
| | 54 | 66 | P2C54JX400ATS | P2A54JX400ATS | P2E54JX400ATS | P2L54JX400ATS |
| | 66 | 74 | P2C66JX400ATS | P2A66JX400ATS | P2E66JX400ATS | P2L66JX400ATS |
| 600 | 18 | 56 | P2C18LX600ATS | P2A18LX600ATS | P2E18LX600ATS | P2L18LX600ATS |
| | 30 | 62 | P2C30LX600ATS | P2A30LX600ATS | P2E30LX600ATS | P2L30LX600ATS |
| | 42 | 68 | P2C42LX600ATS | P2A42LX600ATS | P2E42LX600ATS | P2L42LX600ATS |
| | 54 | 74 | P2C54LX600ATS | P2A54LX600ATS | P2E54LX600ATS | P2L54LX600ATS |

(1) Refer to Pg 12, table P2-21 for breaker kits and accessories (2) Part # for Interior only (3) Refer to Pg 4 for Main breaker selection (4) Refer to Pg 5 for Branch circuit breaker selection (5) Refer to Pg 12, table P2-20 for box and trim details (6) For more number of circuits, contact local Siemens representative before ordering

P2 Panel Options

Enclosures

- Extra gutter to sides or ends of the can
- 24" wide boxes
- Hinged trims*
- Door-in-door trims*
- Screw to the box trims*
- Trim mounted devices (Devices mounted and wired to the trim should also have hinged trim specified)
 - Pilot lights
 - Toggle switches
 - Push buttons
- Painted boxes
- Custom colors
- Increase gauge trims and boxes*
- Stainless steel trims and boxes, Type 1*

Panel Modifications

- Main Bus

Standard main bus is temperature rated tin-plated aluminum. Bus options are 750 A/Si aluminum, tin-plated temperature rated copper tin-plated standard – silver optional. 1000 A/Si copper tin-plated standard – silver optional. Includes copper neutral cross bar. For copper neutral branch lugs, see miscellaneous.
- Split bus adds 6" to unit space*
- Compression lug for MLO*
- Compression lugs on main breaker (may require extra width or length on enclosure)*
- Contactor mains or submain*
 - Asco 920 through 225 amps. Adds 12" unit space as main, 15" unit space as submain.*
 - Asco 911 through 150 amps. Adds 21" unit space.*
 - Siemens LEN through 30 amps. Adds 12" unit space.* Makes box 10" deep.
- Control power transformers (contact engineering for extra* gutter requirements)
- Branch and main breaker accessories
 - Handle blocks
 - Handle locks
 - Aux. Contacts ¹
 - UVR ¹
- Feed-thru lugs
- 200% neutral
- Copper lugs, mechanical
- Bus mounted TVSS
- Service entrance labeled

¹ Accessories on 1" pole breakers (BL, BQD, ED) will take unit space.

*Contact local Siemens representative for any options & modifications.

- Aluminum trims and boxes, Type 1*
- NEMA 3R/12 enclosures
- NEMA 4 enclosures
- NEMA 4X enclosures
- Special keyed locks*
- Gasketing trim to box
- Panel skirts

- Grounding of panelboards

Ground bars are shipped with the panel interior factory mounted.

- Non-insulated equipment ground bar – standard
- Copper non-insulated ground bar
- Aluminum insulated equipment ground bar
- Copper insulated equipment ground bar

- Shunt trip on main or branch

BL, BLH, HBL, ED2, ED4, HED4, HED6, HHED6 uses 1" unit space for shunt trip. All may be used on mains or subfeeds.

QJ2, QJ2-H, QJH2, HQJ2H, ED2, ED4, ED6, HED4, HED6, FXD6, HFD6, JXD6, JD6, HJD6, HJXD6

- Remote control switches – mounted in a 23" enclosure to be cable connected to the panel.
- Time clocks – mounted in a 23" enclosure to be cable connected to the panel. Sangamo, tork or paragon time clock can be supplied and mounted in panelboard cabinet.

Table P2-12 – Box Size Additions (In.) For Optional Features

| Options | Main Lugs | | | | Main Breakers | | | | | | | | | |
|-------------------------------------|-----------|------|---------|---------|-------------------------------|-----------------------|---------------------|---------------------|---------------------|----------------------|------------|-------------|------------|-------------|
| | 125A | 250A | 400A | 600A | 125A Horiz. BL, BQD, ED | 125A Horiz. CED | 125A Vert. ED | 225A Vert. QJ | 250A Vert. FD | 250A Vert. CFD | 400A JD | 400A CJD | 600A LD | 600A CLD |
| 200 Neutral (lug type) | 0 | 0 | 6 (all) | 6 (all) | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 |
| Std. Lugs (100% Neut. PNL) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 |
| CU Lugs (100% Neut. PNL) | 6 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 |
| Comp Lugs (100% Neut. PNL) | 6 | 6 | 6 | 6 | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 |
| Feed-thru Standard Lugs | 6 | 6 | 12 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 12 | 12 | 12 | 12 |
| Feed-thru Cu Lugs | 6 | 6 | 12 | N/A | 6 | 6 | 6 | 6 | 6 | 6 | 12 | 12 | 12 | N/A |
| Feed-thru Comp Lugs | 6 | 12 | 12 | N/A | 6 | 6 | 6 | 6 | 12 | 12 | 12 | 12 | 12 | N/A |
| Subfeed Standard Lugs | 0 | 6 | 6 | N/A | — | — | — | — | — | — | — | — | — | — |
| Split Bus | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| (1) FD Subfeed (Horizontal Mtg.) | N/A | 12 | 12 | 12 | N/A | N/A | N/A | N/A | 12 | 12 | 12 | 12 | 12 | 12 |
| (2) FD Subfeed (Vertical Mtg.) | N/A | 24 | 24 | 24 | N/A | N/A | N/A | N/A | 24 | 24 | 24 | 24 | 24 | 24 |
| TVSS | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |

Split bus is paired with feed-thru lugs by default. Feed-thru lugs are to feed the section after the split. NOTE: N/A = OPTION NOT AVAILABLE

*Contact local Siemens representative before any modification.

Compression Lugs

Table P2-13 – Lugs

| Style | Amp Rating | Breaker Type | Compression Connectors | Box Height Addition |
|--------------|------------|---|--|---|
| MLO | 125 | N/A | (1)#6 - 350 Kcmil Al/Cu | 6 |
| | 250 | N/A | (1)#6 - 350 Kcmil Al/Cu | 6 |
| | 400 | N/A | (1) 400 - 600 Kcmil Cu or (2)#6 - 350 Kcmil Al/Cu | 6 |
| | 600 | N/A | (2)#6 - 350 Kcmil Cu or Cu/Al or 400 - 600 Kcmil Al/Cu | 6 |
| Main Breaker | 100 | ED4, ED6, HED4 CED6 | (1)#14-2/0 AWG Cu or Al | Box must go to 24" wide on CED6 breaker only Add 6" to box height for NØ |
| | 225 | QJ2, QJH2, QJ2H FXD6, HFD6, CFD6 | (1)#6 AWG - 350 Kcmil Cu or Al (1)#6 AWG - 350 Kcmil Cu or Al | Box must go to 24" wide Box must go to 24" wide for all breakers Requires an additional 6.0" box height |
| | 400 | JD6, JXD6, HJD6, CJD6, SJD6, SHJD6, SCJD6 | (2)#1/0 AWG - 500 Kcmil Cu or Al | 9 |
| | 600 | LD6, LXD6, HLD6, CJD6, SLD6, SHLD6, SCLD6 | (2)#2/0 AWG - 500 Kcmil Cu or Al | 6 |

Table P2-14 – Alternate Lugs*

| Style | Amp Rating | Breaker Type | Compression Connectors | Box Height Addition |
|--------------|------------|---|--|---------------------|
| MLO | 400 | N/A | (1) 250 - 750 Kcmil or (2)#3/0 AWG - 250 Kcmil Cu or Al | 6 |
| Main Breaker | 400 | JD6, JXD6, HJD6, CJD6, SJD6, SHJD6, SCJD6 | (1)#4/0 AWG - 750 Kcmil Cu or Al | 6 |

*Contact local Siemens representative for any modifications.

Enclosure Modifications

NEMA-4 For Type P2*
Water Tight, Dust Tight, Steel Enclosure

Table P2-15

| Box Height Inches | Enclosure Size | | |
|-------------------|----------------|----|---|
| | H | W | D |
| 26 | 30 | 24 | 8 |
| 32 | 36 | 24 | 8 |
| 38 | 42 | 30 | 8 |
| 44 | 48 | 36 | 8 |
| 50 | 60 | 36 | 8 |
| 56 | 60 | 36 | 8 |
| 62 | 66 | 36 | 8 |
| 68 | 72 | 36 | 8 |
| 74 | 78 | 36 | 8 |
| 80 | 84 | 36 | 8 |

NEMA-4X For Type P2*
Water Tight, Dust Tight and Corrosion Resistant

Table P2-16

| Box Height Inches | Enclosure - Stainless Steel and Steel with Epoxy Coating | | | Enclosure - Fiberglass Size (inches) | | |
|-------------------|--|----|----|--------------------------------------|----|----|
| | H | W | D | H | D | W |
| 26 | 30 | 24 | 8 | 30 | 24 | 8 |
| 32 | 36 | 24 | 8 | 36 | 24 | 8 |
| 38 | 48 | 36 | 8 | 48 | 36 | 12 |
| 44 | 48 | 36 | 8 | 48 | 36 | 12 |
| 50 | 60 | 36 | 12 | 60 | 36 | 12 |
| 56 | 60 | 36 | 12 | 60 | 36 | 12 |
| 62 | 66 | 36 | 8 | 72 | 36 | 8 |
| 68 | 72 | 36 | 8 | 72 | 36 | 8 |
| 74 | 78 | 36 | 8 | 84 | 36 | 8 |
| 80 | 84 | 36 | 8 | 84 | 36 | 8 |

Remote Switch Modifications

Table P2-17 – Control Power*
Transformer

| Size | VA |
|------|-----|
| 0,1 | 50 |
| 2 | 75 |
| 3 | 150 |
| 4 | 250 |

Table P2-18 – Application For Remote Switch*

| Switch Type | Modification |
|-------------|--|
| 920 | Adds 12" to unit space |
| 911 | ≤ 225A adds 21" unit space >225 ≤400 Amps add 10" to width and 8" DP minimum and 24" to height |
| LEN | 30A adds 15" to unit space >30A 100 adds 12" to unit space 7.7 Dp. Box min. 100 A ≤ 200 adds 12" to unit space and 10" DP. min. |

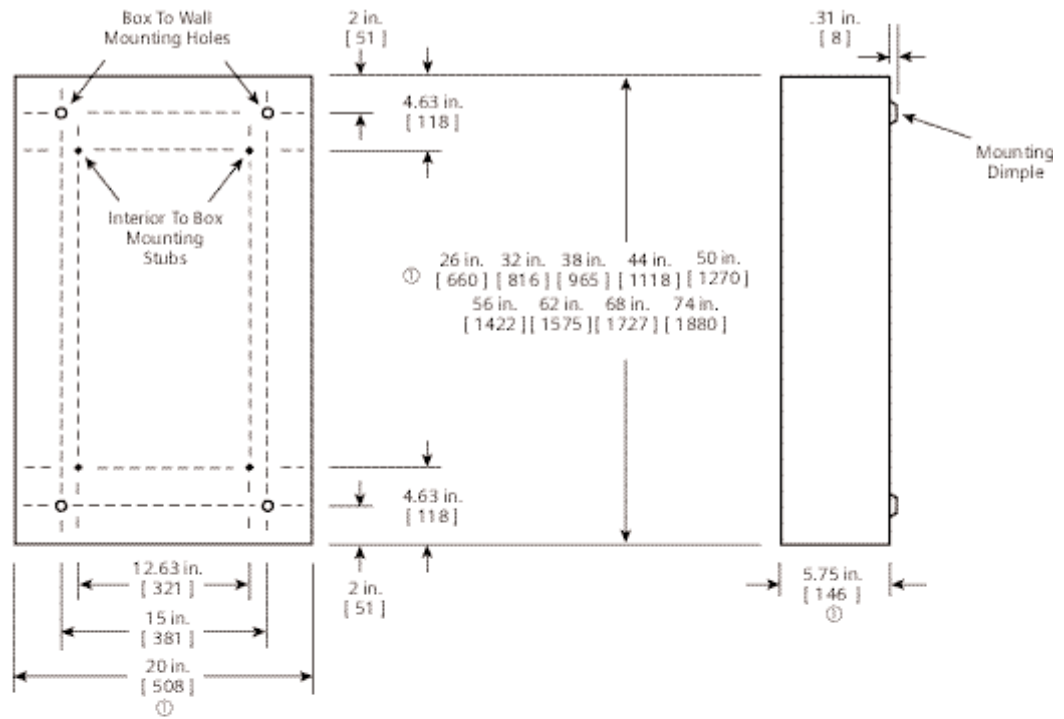
Table P2-19 – Remote Control
Switch Modification*

| Description |
|--|
| Auxiliary Contacts (Mounted Not Wired) Ea. 2-Wire Control |

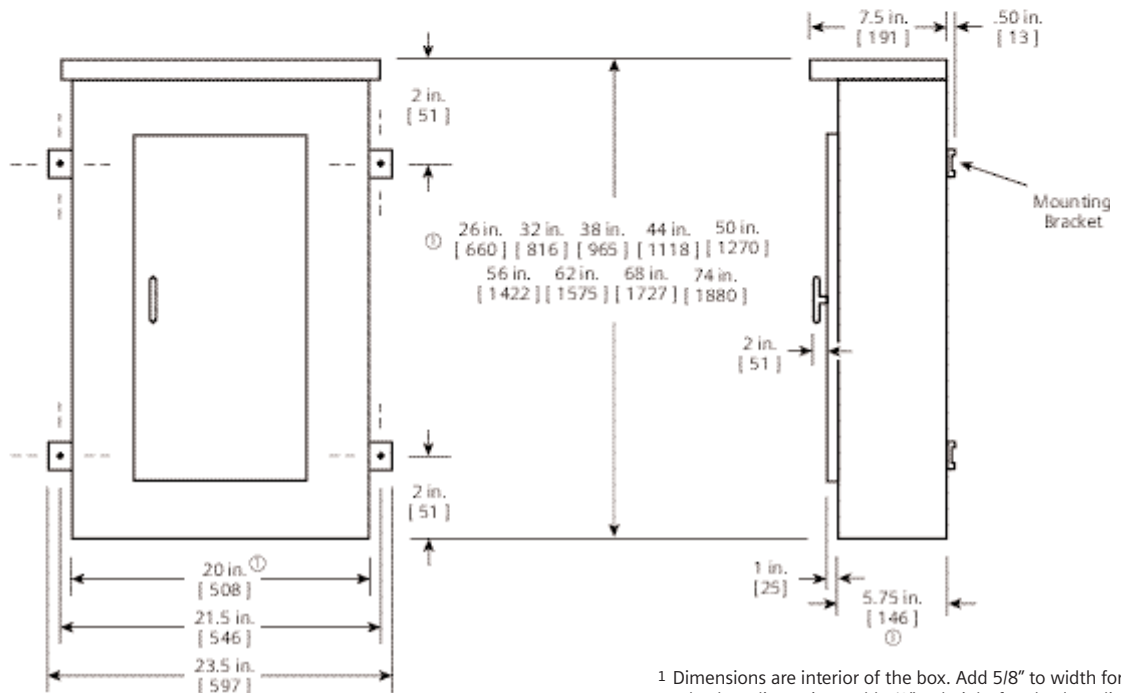
*Contact local Siemens representative for any modifications.

Type 1 Box

Box is symmetrical



Type 3R/12 Box



¹ Dimensions are interior of the box. Add 5/8" to width for absolute dimension. Add 1/8" to height for absolute dimension.

Dimensions shown in inches and millimeters [].

Table P2-20 – Standard Enclosures

| Box Height Inches | Catalogue Number | | | | | |
|-------------------|----------------------|---------|-------|----------------------|---------|---|
| | Type 1 Standard Trim | | | Type 2 Standard Trim | | Type 3R/12 (1) Complete Enclosure With Hinged Cover |
| | Box | Surface | Flush | Box | Surface | |
| 26 | B26 | S26B | F26B | DSB52026 | S26B | WP26 |
| 32 | B32 | S32B | F32B | DSB52032 | S32B | WP32 |
| 38 | B38 | S38B | F38B | DSB52038 | S38B | WP38 |
| 44 | B44 | S44B | F44B | DSB52044 | S44B | WP44 |
| 50 | B50 | S50B | F50B | DSB52050 | S50B | WP50 |
| 56 | B56 | S56B | F56B | DSB52056 | S56B | WP56 |
| 62 | B62 | S62B | F62B | DSB52062 | S62B | WP62 |
| 68 | B68 | S68B | F68B | DSB52068 | S68B | WP68 |
| 74 | B74 | S74B | F74B | DSB52074 | S74B | WP74 |

Options for Type 1 & 2 Tubs

- Add suffix "K" for enclosure c/w tub end wall with knockouts
- Add suffix "KN" for enclosure c/w tub end wall with knockouts and gasketed
- Add suffix "N" for enclosure gasketed
- Add suffix "P" for enclosure painted std grey
- Add suffix "PK" for enclosure painted std grey c/w tub end wall with knockouts
- Add suffix "PKN" for enclosure painted std grey c/w tub end wall with knockouts and gasketed
- Add suffix "PN" for enclosure painted std grey and gasketed
- Add suffix "M" for metal card holder
- Hinged trim - Replace "B" suffix with "H"
- Door-in-door - Replace "B" suffix with "D"
- Metal card holder – Add "M" suffix

Option For 24" Wide Enclosures with Equal Gutter on Both Sides

24" wide with equal gutter on both sides - Add "24" as prefix

(1) For Silicon free enclosure, contact local Siemens representative.

Table P2-21 – Breaker Kits and Accessories (1)

| Kit No. | Description | Contents |
|-----------|---|---|
| BBKB32AT | BL/BQD 6-pole 3" branch breaker kit | Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware (Al/Tin) |
| BBKED32AT | ED 6-pole 3" branch breaker kit | Kit contains breaker support, inter-phase barriers, (3) A/C connectors, (1) B connector, hardware (Al/Tin) |
| BBKQ1AT | QJ branch breaker kit for 2 and 3-pole single mount | Kit to contain all connectors and cover plates necessary to mount both 2 and 3-pole breakers (Al/Tin) |
| DFK1 | BL, BQD, ED deadfront kit for 1" pole breakers | Center strips 3", 6", 9," 15," 21" plus mounting hardware |
| DFFP3 | Deadfront filler 3" | 3" empty space filler and hardware |
| DFFP6 | Deadfront filler 6" | 6" empty space filler and hardware |
| BNK2 | Branch neutral (P2) | Three tier lug with mounting hardware to increase neutral capacity |
| P2BK1 | P2 250A max. Bonding Kit | Bonding strap and hardware |
| P2BK2 | P2 400A max. Bonding Kit | Bonding strap and hardware |
| P2BK3 | P2 600A max. Bonding Kit | Bonding strap and hardware |
| BBKB32CS | BL/BQD 6-pole 3" branch breaker kit | Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware (Cu/Silver) |
| BBKED32CS | ED 6-pole 3" branch breaker kit | Kit contains breaker support, inter-phase barriers, (3) A/C connectors, (1) B connector, hardware (Cu/Silver) |
| BBKQ1CS | QJ branch breaker kit for 2 and 3-pole single mount | Kit to contain all connectors and cover plates necessary to mount both 2 and 3-pole breakers (Cu/Silver) |

(1) For CEDG branch breaker kit, contact local Siemens representative

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