## P1 Panelboards

## Features

P1 panelboards are pre-engineered to accept the most common modifications without increasing box height. The enclosure size is determined by the number of circuits as shown in the Main Lug Table P1-5 or the Main Circuit breaker Table P1-3. All P1 Main Lug or main breaker panelboards have space built-in to accept either feed-thru lugs equal to the panel rating, one subfeed circuit breaker up to 250 amperes or a surge suppressor (TVSS) without increasing box height.
Note the following features, all found in the innovative P1 lighting panelboards:

- Symmetrical interiors - No top or bottom. To change from top to bottom (or vice versa), simply invert the interior. The deadfront labeling is always right-side up.
- First in the - industry Ratings of 125 through 400A main lug and main breaker. Field convertible from main lug ro main breaker and vice versa - with no increase in enclosure height.
- Field adaptability of feed-thru lugs or subfeed circuit breaker without increasing enclosure size.
- Neutral system is field upgradeable to 200\% capacity - another industry first.

- Three circuit sizes means only three box heights, regardless of main configuration through 250 amp and an additional three circuit version and boxes available at 400 amps.
- Suitable for use as service entrance given compliance with NEC.
- Bonding provisions are shipped with each panel.
- 240 V and $480 \mathrm{~V} / 277 \mathrm{~V}$ for versions utilize identical boxes and fronts.
Voltage - 480Y / 277 Vac max. 250V Vdc max.
Amperage - 400 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 P1 panel is limited to 22 KAIC. Note that the main device may be mounted remote from the panel.
Bussing - The P1 panel meets the majority of the market's bussing requirements. The standard bussing is temperature rated aluminum. The rating is per the requirements of UL 67 - the standard for panelboards. All aluminum bussing is tinplated. Optional bussing for the P1 panel is temperature rated copper. The copper bus option for the 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 ( 54 g per mm ) of box height.

Box Material Gauge

| Width | Height (in.) | Gauge Steel |
| :--- | :--- | :--- |
| $20^{\prime \prime}$ | $32,38,44$ | $\# 16$ |
|  | $56,62,68$ |  |

Trim Material Gauge

| Width | Height (in.) | Gauge Steel |
| :--- | :--- | :--- |
| $20^{\prime \prime}$ | $32,38,44$ | $\# 14$ |
|  | $56,62,68$ |  |

## Lighting Panelboards

Main Lug or Main Breaker

| Maximum Ampere Rating | Main Breaker Type | Maximum Number of Poles | Box Height Inches (mm) | Connections Suitable for Cu or Al |
| :---: | :---: | :---: | :---: | :---: |
| 100 | BL, BLH HBL BQD | $\begin{aligned} & 18 \\ & 30 \\ & 42 \end{aligned}$ | $\begin{array}{\|l\|} \hline 32(813) \\ 38(965) \\ 44(1118) \\ \hline \end{array}$ | \#8-\#6 AWG Cu or AI <br> \#8-6 AWG Cu or \#8-4 AWG AI <br> \#8-\#1 AWG Cu or \#6-\#1/0 AWG Al |
| 125 | NGB |  | $\begin{array}{\|l\|} \hline 32(813) \\ 38(965) \\ 44 \text { (1118) } \end{array}$ | 15-30 amp \#14-\#6 Cu or \#12-\#6 Al 35-125 amp \#6-1/0 Cu. \#4-2/0 AI. |
|  | $\begin{aligned} & \text { EDZ, ED4 } \\ & \text { ED6, HED4 } \\ & \text { HED6 } \end{aligned}$ |  | $\begin{array}{\|l\|l} \hline 32(813) \\ 38(965) \end{array}$ | $\begin{aligned} & \text { \#14-\#10 AWG Cu or \#12-10 AWG AI } \\ & \text { \#3-3/0 Cu or } \\ & 44 \text { (1118) \#1-2/0 Al } \\ & \hline \end{aligned}$ |
| 225 | $\begin{aligned} & \text { Q12 } \\ & \text { QJH2 } \\ & \text { QJ2-H } \\ & \hline \end{aligned}$ |  | $\begin{array}{\|l\|} \hline 32(813) \\ 38(965) \\ 44(1118) \\ \hline \end{array}$ | \#6 AWG-300 Kcmil (Cu) or <br> \#4 AWG-300 Kcmil (AI) |
| 250 | $\begin{aligned} & \hline \text { FXD6 } \\ & \text { FD6 } \\ & \text { HFD6, HFXD6 } \\ & \hline \end{aligned}$ |  | $\begin{array}{\|l} \hline 32(813) \\ 38(965) \\ 44 \text { (1118) } \\ \hline \end{array}$ | \#6 AWG-350 Kcmil (Cu) or <br> \#4 AWG-350 Kcmil (AI) |
| $\leq 250$ | MLO |  | $\begin{array}{\|l\|} \hline 32(813) \\ 38(965) \\ 44(1118) \\ \hline \end{array}$ | (1) \#4-350 Kcmil |
| 400 | $\begin{aligned} & \hline \text { JD6, JXD6 } \\ & \text { HJD6 } \\ & \text { HJXD6 } \\ & \hline \end{aligned}$ | $\begin{aligned} & 18 \\ & 30 \\ & 42 \end{aligned}$ | $\begin{array}{\|l} \hline 56(1422) \\ 62(1575) \\ 68(1727) \\ \hline \end{array}$ | 3/0-500 Kcmil (Cu) or 4/0-500 Kcmil (Al) |
|  | MLO |  | $\begin{array}{\|l} \hline 56(1422) \\ 62(1575) \\ 68(1727) \\ \hline \end{array}$ | (1) $250-600$ Kcmil or <br> (2) \#3/0-500 Kcmil |

Side Gutter Wiring Space Inches (mm) (Fig. P1-1)

| Reference <br> Letter | Panel <br> Width 20" | Panel <br> Width 24" <br> Optional |
| :--- | :--- | :--- |
| A | $6.375(162)$ | $8.375(213)$ |
| B | $5.500(140)$ | $7.500(191)$ |
| C | $5.000(127)$ | $7.000(178)$ |
| D(1) | $6.125(156)$ | $8.125(206)$ |
| E(1) | $6.500(165)$ | $8.500(216)$ |
| F(1) | $5.250(133)$ | $7.250(184)$ |

(1) Subfeed mounting limit 1 per panel

Fig. P1-1


Main Device Gutter


Main Breaker Gutter Dimensions Inches (mm)

| Main Breaker | Gutter |  | Neutral Location |
| :--- | :--- | :--- | :--- |
|  | 20" wide box | 24" wide box | 20" wide box |
| BL, BLH, HBL, BQD | $8.500(216)$ | $10.500(267)$ | $11.500(292)$ |
| ED2, ED4, ED6, HED4 | $6.125(156)$ | $8.125(206)$ | $11.500(292)$ |
| QJ2, QJH2, QJ2-H | $6.500(165)$ | $8.500(216)$ | $11.500(292)$ |
| FD6, FXD6, HFD6 | $5.250(133)$ | $7.250(184)$ | $11.500(292)$ |
| JD6, JXD6 \&\#1; | $15.000(381)$ | $15.000(381)$ | $26.750(680)$ |

(1) JD frame mounted vertically.

## Typical Panelboard Wiring Diagrams



1 Phase, 3 Wire


3 Phase, 4 Wire,
3 Phase, 3 Wire (No SN)


1 Phase, 3 Wire


3 Phase, 4 Wire,
3 Phase, 3 Wire (No SN)

Breaker Mounting Kit - Main or Subfeed w/o Breaker

| Amp <br> Rating | Breaker Frames | Service | Catalog <br> Number |
| :--- | :--- | :--- | :--- |
| $\mathbf{1 0 0}$ | BL, BLH, HBL | 1 Phase | MBKBL1 |
|  |  | 3 Phase | MBKBL3 |
|  | BQD | 3 Phase | MBKBC3 |
| $\mathbf{1 2 5}$ | NGB | 1 Phase | MBKNB1 |
|  |  | 3 Phase | MBKNB3 |
|  | ED2, ED4, ED6, HED4, HED6 | 1 Phase | MBKED1 |
|  |  | 3 Phase | MBKED3 |
| $\mathbf{2 2 5}$ | QJ2, QJH2, QJ2-H | 1 Phase | MBKQJ1 |
|  |  | 3 Phase | MBKQJ3 |
| $\mathbf{4 0 0}$ | FXD6, FD6, HFD | 1 Phase | MBKFD1 |
|  |  | 3 Phase | MBKFD3 |

Lug Kits - Main or Feed-thru

| Amp Rating | Material | Wire Range | Service | Catalog Number |
| :---: | :---: | :---: | :---: | :---: |
| 250 | AI | (1) \#6 AWG-350 Kcmil (Cu or Al) | 1 Phase | MLKA1 |
|  |  | (1) \#6 AWG-350 Kcmil (Cu or Al) | 3 Phase | MLKA3 |
|  | Cu | (1) \#6 AWG-350 Kcmil (Cu or Al) | 1 Phase | MLKC1 |
|  |  | (1) \#6 AWG-350 Kcmil (Cu or Al) | 3 Phase | MLKC3 |
| 400 | AI | (2) 3/0-(1) 600 Kcmil | 1 Phase | 4MLKA1 |
|  |  | (2) 3/0-(1) 600 Kcmil | 3 Phase | 4MLKA3 |
|  | Cu | (2) 3/0-(1) 600 Kcmil | 1 Phase | 4MLKC1 |
|  |  | (2) $3 / 0-(1) 600 \mathrm{Kcmil}$ | 1 Phase | 4MLKC3 |

200\% Neutral Lug Kits - 250A

| Number <br> of Circuits | Description | Catalog Number |
| :--- | :--- | :--- |
| 18 | 2 Branch Neutral Strips, <br> 2 Main Neutral Lug, Hardware | 2NLK18 |
| 30 | 2 Branch Neutral Strips, <br> 2 Main Neutral Lug, Hardware | 2NLK30 |
| 42 | 2 Branch Neutral Strips, <br> 2 Main Neutral Lug, Hardware | 2NLK42 |

200\% Neutral Lug Kits - 400A

| Number <br> of Circuits | Description | Catalog Number |
| :--- | :--- | :--- |
| 18 | 2 Branch Neutral Strips, <br> 4 Main Neutral Lug, Hardware | 42NLK18 |
| 30 | 2 Branch Neutral Strips, <br> 4 Main Neutral Lug, Hardware | 42NLK30 |
| 42 | 2 Branch Neutral Strips, <br> 4 Main Neutral Lug, Hardware | 42NLK42 |

## Copper Neutral Lug Kits - 250A and 400A

| Number <br> of Circuits | Description | Catalog Number |
| :--- | :--- | :--- |
| 18 | 2 Branch Neutral Strips, <br> 1 Main Neutral Lug, Hardware | CNLK18 |
| 30 | 2 Branch Neutral Strips, <br> 1 Main Neutral Lug, Hardware | CNLK30 |
| 42 | 2 Branch Neutral Strips, <br> 1 Main Neutral Lug, Hardware | CNLK42 |

## Branch Circuit Breakers

| Max. <br> Amp <br> Rating | Breaker Type | No. of Poles | Amp Rating | Maximum Interrupting Rating (kA) |  |  |  |  |  |  | Load Connectors |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Volts - AC |  |  |  |  |  | DC |  |  |
|  |  |  |  | 120 | 120/240 | 240 | 277 | 480 | 600 | 250 |  |  |
| 100 | BL | 1 | 15-70 | 10 | - | - | - | - | - | - | 15-20A | \#14-\#10 AWG Cu \#12-\#10 AWG AI \#8-\#6 AWG Cu |
|  |  | 2 | 15-100 | - | 10 | - | - | - | - | - |  |  |
|  |  | 3 | 15-100 | - | - | 10 | - | - | - | - |  |  |
|  | BL, HD | 1 | 15-30 | 10 | - | - | - | - | - | - |  |  |
|  |  | 2 | 15-30 | - | 10 | - | - | - | - | - |  |  |
|  | BLR | 2 | 15-100 | - | - | 10 | - | - | - | - |  |  |
|  | BLE | 1 | 15-30 | 10 | - | - | - | - | - | - |  |  |
|  |  | 2 | 15-60 | - | 22 | - | - | - | - | - |  |  |
|  | BLEH | 1 | 15-30 | 22 | - | - | - | - | - | - |  |  |
|  |  | 2 | 15-60 | - | 10 | - | - | - | - | - | 25-35A |  |
|  | BLF | 1 | 15-30 | 10 | - | - | - | - | - | - |  | \#8-\#6 AWG AI \#8-\#6 AWG Cu \#8-\#4 AWG AI |
|  |  | 2 | 15-60 | - | 10 | - | - | - | - | - | 40-50A |  |
|  | BLHF | 1 | 15-30 | 22 | - | - | - | - | - | - |  |  |
|  |  | 3 | 15-60 | - | 22 | - | - | - | - | - | $\begin{array}{\|l\|} 55-70 A \\ 80-100 A \end{array}$ | \#8-\#4 AWG Cu \#8-\#2 AWG AI \#4-\#1/0 AWG Cu \#2-\#1/0 AWG AI |
|  | BGL(2) | 2 | 15-30 | 10 | - | - | - | - | - | - |  | \#4-\#1/0 AWG Cu \#2-\#1/0 AWG AI |
|  |  | 3 | 15-30 | - | 10 | - | - | - | - | - |  |  |
|  | BAF | 1 | 15-20 | 10 | - | - | - | - | - | - |  |  |
|  | BAFH | 1 | 15-20 | 22 | - | - | - | - | - | - |  |  |
|  |  | 1 | 15-70 | - | 22 | - | - | - | - | - |  |  |
|  | BLH | 2 | 15-100 | - | 22 | - | - | - | - | - |  |  |
|  |  | 3 | 15-100 | - | - | 22 | - | - | - | - |  |  |
|  |  | 1 | 15-70 | - | 65 | - | - | - | - | - |  |  |
|  | HBL | 2 | 15-100 | - | 65 | - | - | - | - | - |  |  |
|  |  | 3 | 15-100 | - | - | 65 | - | - | - | - |  |  |
|  |  | 1 |  | - | 65 | - | 14 | - | - | 14 | 15-40A | \#14-\#6 AWG Cu |
|  | BQD | 2 | 15-100 | - | 65 | - | - | 14 | - | 14 |  | \#12-\#6 AWG AI |
|  |  | 3 |  | - | - | 65 | - | 14 | - | 14 | 45-100A | \#8-\#1 AWG Cu \#6-\#1/0 AWG Al |
|  |  | 1 |  | 100 | - | - | 25 | - | - | 14 | 15-30A | \#14-\#6 Cu |
| 125 | NGB(3) | 2 | 15-125 | - | 100 | 100 | - | 25 | - | - |  | \#12-\#6 Al |
|  | (1) | 3 |  | - | 100 | 100 | - | 25 | - | - | 35-125 | $\begin{aligned} & \# 6-1 / 0 \mathrm{Cu} \\ & \# 4-2 / 0 \mathrm{Al} \\ & \hline \end{aligned}$ |

(1) Main Only
(2) Two pole breaker is one phase and neutral. Three pole is two phase and neutral.
(3) P1 panel with NGB branch devices will not accept BL or BQD frames in the same panel as branch devices.

NOTE: BL, HBL, BLH and BQD breakers are mounted in common mountings in $3^{\prime \prime}$ or (6) pole increments.

## Modifications and Dimensions

## 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 mountedand 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
- Aluminum trims and boxes, Type 1
- NEMA 3R enclosures
- NEMA 3R/12 enclosures
- NEMA 4 enclosures
- NEMA 4X enclosures
- Special keyed locks
- TEY
- TEU1
- Cat 60
- LL803
- LL806
- Yale
- Meters
(Contact application engineering for space requirements.)
- Panel skirts
- Gaskets between trim and box


## Type P1 Dimensions

## Type 1 Box (Box is Symmetrical)



Type 3R and 3R/12 Box


Flush Mounting

(1) Dimensions are interior of the box. Add $5 / 8^{\prime \prime}$ to width for absolute dimension.

Add $1 / 8^{\prime \prime}$ to height for absolute dimension. Dimensions shown in inches and millimeters [ ].

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## P2 Panelboards

## Features

Flexibility is the hallmark of the P 2 panel. This panel offers a wide array of factoryassembled options to meet virtually any lighting panel application. The ability to mix breaker frames within the unit space up to 225 amps will also meet certain distribution panel requirements in a much smaller package. Bussing options for the $P 2$ vary from a typical temperature rating of $750 \mathrm{~A} / \mathrm{Si}$ aluminum, to 1000 Al Si copper. Standard bussing in the P2 panel is tin-plated. Silver-plated copper is offered as an option. Integrated time clocks, bus mounted contactors (as mains or sub mains), split bus, and subfeed lugs (up to 400 amps ) are just a few of the options available in this unique panel.
As with our other lighting panelboards, the standard P2 panel set up includes 18, 30, 42 or 54 breakers. In specific applications, the panel can accept 66, 78 or 90 circuits. The $6^{\prime \prime}$ circuit increments allow the user to configure the smallest possible panel size. The P2 starts with 9 " of unit space ( 18 circuits of 1 pole breakers). Breakers mounted in the unit space can be mixed and matched to meet customer requirements. The $1^{\prime \prime}$ pole devices (BL, BOD, NGB, ED) are mounted in $3^{\prime \prime}$ or $6^{\prime \prime}$ increments. Breaker frames above 125A are single mounted in a $6^{\prime \prime}$ space. An example of a minimum panel is as follows: (6) 20A, 1-pole, BL breakers ( $3^{\prime \prime}$ of unit space) and a 225A, 3-pole, QJ breaker ( $6^{\prime \prime}$ of unit space) equaling $9^{\prime \prime}$ of unit space can be configured in a P2 panel without any extra provisions or space required. FD 250 and JD 400A breakers are mounted outside the unit space.
Another unique feature of the P2 panel is that blank unit space can be added to allow for future expansion or modifications. All expansion or modifications must be in $3^{\prime \prime}$ increments. $B L, B Q D, N G B$, and ED frame breakers have $3^{\prime \prime}$ or $6^{\prime \prime}$ pole kits, and can be
mixed within 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 $6^{\prime \prime}$ increments for two and three pole, single mounted units. Changes in the unit space length for BL, BQD, NGB or ED frame breakers require an addition deadfront, center strip kit. Check with sales or the factory for additional unit space kits.
Voltage - 600 Vac max.
250V 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.
Bussing - The P2 panel has more options to meet market requirements. The standard bussing is temperature rated aluminum. The rating is per the requirements of UL 67the standard for panelboards. All aluminum bussing is tin-plated. Optional bussing for the P2 panel is: $750 \mathrm{~A} / \mathrm{Si}$ 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 ( 54 g per mm ) of box height.

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

| Dimensions in inches (mm) |  | Gauge Steel |  |
| :--- | :--- | :--- | :--- |
| Width (in.) | Height (in.) | Box | Front |
| 20 " j | $26-74 \mathrm{j}$ | \#16j | \#14 j |
| $(508) \mathrm{j}$ | $(660,1880) \mathrm{j}$ |  |  |

## Lighting Panelboards

## Standard Circuit P2 Panels

Base Box Size Requirements for P2 Panels with Standard Line Lugs, and fewer than 55 poles of 1" module (BL,BQD, ED, NGB) branch breakers and provisions. Unit Spaces range from 9" to $45^{\prime \prime}$ (in $6^{\prime \prime}$ increments). Boxes range from 26 " to 74 " high (in $6^{\prime \prime}$ increments). Inclusion of optional modifications may require size increases that must be added to these base values to calculate the final box size for the panel. Vertical Main breaker options with the "Vert." designation are added-price options. Values in brackets [ ], at the bottom of each column, indicate the maximum allowable 1" module branch poles for each main type.

| "B" Dimen- <br> sion Box <br> Height | P2 Panels with Standard Line Lugs. Unit Space (starting with 9" and adding 6" increments) "A" Dimension |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Main Lugs |  |  | Main Breakers |  |  |  |  |  |  |  |  |  |  |  |
|  | 125A | 250A | $\begin{aligned} & \text { 400A } \\ & 600 \mathrm{~A} \end{aligned}$ | 125A Horiz. BL, BQD, NGB, ED | 125A <br> Vert. ED(1) | 125A Horiz. CED | 225A Horiz. QJ | 225A Vert. QJ(1) | 250A Horiz. FD | 250A Vert. FD ${ }^{1}$ | $\begin{aligned} & \text { 250A } \\ & \text { CFD } \end{aligned}$ | $\begin{aligned} & \text { 400A } \\ & \text { JD } \end{aligned}$ | $\begin{aligned} & \text { 400A } \\ & \text { CJD } \end{aligned}$ | $\begin{aligned} & \text { 600A } \\ & \text { LD } \end{aligned}$ | $\begin{aligned} & \text { 600A } \\ & \text { CLD } \end{aligned}$ |
| 26 | 9 | - | - | 9 | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 15 | 9 | - | 15 | 9 | 9 | 9 | - | - | - | - | - | - | - | - |
| 38 | 21 | 15 | 9 | 21 | 15 | 15 | 15 | 9 | 9 | - | - | - | - | - | - |
| 44 | 27 | 21 | 15 | 27 | 21 | 21 | 21 | 15 | 15 | 9 | - | - | - | - | - |
| 50 | 27 | 27 | 21 | 27 | 27 | 27 | 27 | 21 | 21 | 15 | 9 | 9 | - | - | - |
| 56 | 39 | 27 | 27 | 39 | 33 | 33 | 33 | 27 | 27 | 21 | 15 | 15 | - | 9 | - |
| 62 | 45 | 39 | 33 | 45 | 39 | 39 | 39 | 33 | 33 | 27 | 21 | 21 | 9 | 15 | 9 |
| 68 | 45 | 45 | 39 | 45 | 45 | 45 | 45 | 39 | 39 | 33 | 27 | 27 | 15 | 21 | 15 |
| 74 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 39 | 33 | 33 | 21 | 27 | 21 |
|  | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [54p] | [42p] | [54p] | [42p] |

## Extended Circuit P2 Panels

Base box size requirements for Extended Circuit P2 Panels with Standard Line Lugs, and 55 or more poles of 1" module (BL,BQD, ED, NGB) branch breakers and provisions. Unit Spaces range from $33^{\prime \prime}$ to $45^{\prime \prime}$ (in $6^{\prime \prime}$ increments). Boxes range from 56 " to 74 " high (in 6" increments). Inclusion of optional modifications may require size increases that must be added to these base values to calculate the final box size for the panel (see pages <?>, <?>). Vertical Main breaker options with the "Vert." designation are added-price options (see page <?>). Values in brackets [ ], at the bottom of each column, indicate the maximum allowable 1" module branch poles for each main type.

| "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 | $\begin{aligned} & \text { 400A } \\ & \text { 600A } \end{aligned}$ | 125A Horiz. BL, BQD, NGB, ED | 125A Vert. ED ${ }^{1}$ | 125A Horiz. CED | 225A Horiz. QJ | 225A Vert. QJ(1) | 250A <br> Horiz. FD | 250A Vert. FD ${ }^{1}$ | $\begin{array}{\|l} \text { 250A } \\ \text { CFD } \\ \hline \end{array}$ | $\begin{aligned} & \text { 400A } \\ & \text { JD } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { 400A } \\ & \text { CJD } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { 600A } \\ & \text { LD } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { 600A } \\ & \text { CLD } \\ & \hline \end{aligned}$ |
| 56 | 33 | - | - | 33 | - | - | 33 | - | - | - | - | - | - | - | - |
| 62 | 39 | 33 | 33 | 39 | 33 | 33 | 39 | 33 | - | - | - | - | - | - | - |
| 68 | 45 | 39 | 39 | 45 | 39 | 39 | 45 | 39 | 33 | - | - | - | - | - | - |
| 74 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 39 | 33 | - | 33 | - | - | - |
|  | [90p] | [90p] | [90p] | [90p] | [90p] | [90p] | [90p] | [90p] | [78p] | [66p] | [54p] | [66p] | [42p] | [54p] | [42p] |

©Note: The vertical main breaker application for ED, QJ, and FD adds 6 " of box height.

Main breaker wire bending space diagram

Main lug wire bending space diagram


## Standard Circuit P2 Panels

## Main Breaker Wire Bending

| Standard Circuits (up to 54 1" module branch poles) |  |  |  |
| :--- | :--- | :---: | :---: |
|  | Breaker Frames | C(1) | D(1 |
|  | BL | 5.75 | 8.00 |
|  | BQD | 5.13 | 8.00 |
| 125 | NGB | 4.63 | 8.00 |
|  | ED (horiz.) | 4.00 | 8.00 |
|  | ED (vert.) | 6.56 | 11.13 |
| 225 | QJ (horiz.) | 5.00 | 7.00 |
|  | QJ (vert.) | 10.06 | 16.69 |
| 250 | FD (horiz.) | 5.00 | 7.00 |
|  | FD (vert.) | 13.25 | 22.72 |
| 400 | JD | 15.38 | 25.00 |
| 600 | LD | 15.38 | 23.00 |

## Main Lug Connectors

| Standard Circuits (up to 54 1" module branch poles) |  |  |  |
| :--- | :--- | :---: | :---: |
| Panel Amps | Standard Connectors | C(1) | D(1 |
| 125 | (1) \#14-2/0 | 6.62 | 8.19 |
| 250 | (1) \#6 AWG - 350 MCM | 11.75 | 10.72 |
| 400 | (1) \#4 AWG - 600 MCM or <br> (2) \#6-250 MCM | 14.00 | 13.09 |
| 600 | (2) \#4 AWG -500 MCM | 14.00 | 11.00 |

Extended Circuit P2 Panels

## Main Breaker Wire Bending

| Extended Circuits (more than 54 1" module branch poles) |  |  |  |
| :--- | :--- | :---: | :---: |
|  | Breaker Frames | C( | D(1) |
|  | BL | 5.75 | 6.56 |
|  | BQD | 5.13 | 6.56 |
| 125 | NGB | 4.63 | 6.56 |
|  | ED (horiz.) | 4.00 | 6.56 |
|  | ED (vert.) | 12.56 | 14.88 |
| 225 | QJ (horiz.) | 5.00 | 6.44 |
|  | QJ (vert.) | 10.06 | 15.53 |
| 250 | FD (horiz.) | 5.00 | 5.63 |
|  | FD (vert.) | 19.25 | 25.71 |
| 400 | JD | 15.38 | 23.75 |
| 600 | LD (54p max) | N/A | N/A |

## Main Lug Connectors

| Extended Circuits (more than 54 1" module branch poles) |  |  |  |
| :--- | :--- | :---: | :---: |
| Panel Amps | Standard Connectors | C(1) | D® |
| 125 | (1) \#14-2/0 | 12.62 | 8.91 |
| 250 | (1) \#6 AWG - 350 MCM | 17.75 | 13.69 |
| 400 | (1) \#4 AWG - 600 MCM or <br> (2) \#6-250 MCM | 14.00 | 14.19 |
| 600 | $(2) \# 4$ AWG -500 MCM | 14.00 | 14.23 |

## Branch Breaker Side Gutters Inches (mm)

| Reference <br> Letter | Panel Width 20" (508) |
| :--- | :--- |
| A | $5.750(146)$ |
| B | $5.125(130)$ |
| C | $4.000(102)$ |
| D(2) | $5.000(127)$ |
| E | $4.625(117)$ |


(1) Refer to diagrams at the bottom of page 2
(2) Single branch mounting construction.

Main Breaker Selection ${ }^{\text {( }}$

| Ampere Rating | Breaker Type | Maximum Interrupting Rating (kA) |  |  | Ref. <br> Catalog <br> Number | Available Trip Values |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 240V | 480 V | 600V |  |  |
| 100 | BL | 10 | - | - | BL | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | HBL | 65 | - | - | HB | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | BQD | 65 | 14 | - | BQ | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | BLH | 22 | - | - | BH | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | ED4 | 65 | 18 | - | E4 | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | NGB | 100 | 25 | - | NB | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100 |
|  | ED6 | 100 | 25 | 14 | E6 | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | HED4 | 100 | 42 | - | H4 | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | HHED6 | 100 | 65 | 18 | HA | 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
|  | CED6 ${ }^{\text {8 }}$ | 200 | 200 | 100 | CE | $15,20,25,30,35,40,50,60,70,80,90,100$ |
| 125 | NGB | 100 | 25 | - | NB | 110, 125 |
|  | ED4 | 65 | 18 | - | E4 | 125 |
|  | ED6 | 65 | 25 | 18 | E6 | 125 |
|  | HED4 | 100 | 42 | - | H4 | 125 |
|  | HHED6 | 100 | 65 | 18 | HA | 125 |
|  | CED6 ${ }^{8}$ | 200 | 200 | 100 | CE | 125 |
| 225 | QJ2 | 10 | - | - | QJ | 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | QJH2 | 22 | - | - | QH | 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | QJ2H | 42 | - | - | Q2 | 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | HQJ2H | 100 | - | - | Q3 | 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | FD6 | 65 | 35 | 18 | FD | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | FXD6 | 65 | 35 | 18 | FX | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | HFD6 | 100 | 65 | 25 | HF | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | HFXD6 | 100 | 65 | 25 | H2 | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
|  | CFD6 ${ }^{\text {a }}$ | 200 | 200 | 100 | CF | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225 |
| 250 | FD6 | 65 | 35 | 18 | FD | 250 |
|  | FXD6 | 65 | 35 | 18 | FX | 250 |
|  | HFD6 | 100 | 65 | 35 | HF | 250 |
|  | HFXD6 | 65 | 35 | 25 | H2 | 250 |
|  | CFD6 ${ }^{\text {8 }}$ | 200 | 150 | 100 | CF | 50 |
| 400 | JXD6 ${ }^{\text {® }}$ | 65 | 35 | 25 | JX | 200, 225, 250, 300, 350, 400 |
|  | JD6® | 65 | 35 | 35 | J6 | 200, 225, 250, 300, 350, 400 |
|  | HJXD68 | 100 | 65 | 35 | H6 | 200, 225, 250, 300, 350, 400 |
|  | HJD6® | 100 | 65 | 35 | H5 | 200, 225, 250, 300, 350, 400 |
|  | SJD68 | 65 | 35 | 25 | SJ | 200, 300, 400 |
|  | SHJD6 ${ }^{3}$ | 100 | 65 | 35 | S2 | 200, 300, 400 |
|  | CJD6 ${ }^{8}$ | 200 | 200 | 100 | CJ | 200, 300, 400 |
|  | SCJD6 ${ }^{\text {a }}$ | 200 | 200 | 100 | SC | 200, 300, 400 |
| 600 | LXD6® | 65 | 35 | 25 | LX | 450, 500, 600 |
|  | LD68 | 65 | 35 | 25 | L6 | 250, 300, 350, 400, 450, 500, 600 |
|  | HLXD6 ${ }^{3}$ | 100 | 65 | 35 | HL | 250, 300, 350, 400, 450, 500, 600 |
|  | HLD6 ${ }^{2}$ | 100 | 65 | 35 | HO | 250, 300, 350, 400, 450, 500, 600 |
|  | SLD6* | 65 | 35 | 25 | SL | 300, 400, 500, 600 |
|  | SHLD6® | 100 | 65 | 35 | S6 | 300, 400, 500, 600 |
|  | CLD6 ${ }^{\text {a }}$ | 200 | 150 | 100 | CL | 300, 400, 500, 600 |
|  | SCLD6 | 200 | 150 | 100 | C6 | 300, 400, 500, 600 |

When an ED4, ED6, HED4, QJ2, QJH2, QJ2H, FD6, HFD6, or FXD6 frame main breaker, vertically mounted, is required, price as a main breaker panel and add from the table for the main breaker mounting.

Vertically Mounted Main Breaker
(available in 2-pole or 3-pole)

| Ampere <br> Rating | Breaker Type(s) | Unit Space <br> (in.) |
| :--- | :--- | :--- |
| 100 | ED4, ED6, HED4 | 6 |
| 225 | QJ2, QJH2, QJ2-H <br> FXD6, FD6, HFD6 | 6 |

Subfeed Breakers (available in 2-pole or 3-pole)

| Breaker Type | Mounting Position When Used as Subfeed Breaker | Ampere Ratings For Load | Maximum Interrupting Rating (kA) Symmetrical |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vertical |  | 240V AC | 480V AC | 600V AC |
| FD6®, FXD6 | Twin | 70-250 | 65 | 35 | 22 |
| HFD6®, HFXD6 | Twin | 70-250 | 100 | 65 | 25 |
| JD6®, JXD6 | Single | 200-400 | 65 | 35 | 25 |
| HJD6®, HJXD6 | Single | 200-400 | 100 | 65 | 35 |

(1) Interchangeable trip main breakers are mounted at top of panel only.
(2) Vertically mo
(3) Twin mounted subfeed breakers are mounted at the bottom of panelboard only and adds 24 "to the pane height.
(4) Subfeed breaker is mounted at bottom of panelboard only. 400 amp subfeed breaker adds 24 " to the panel height. (Only for use with MLO)

## Standard Enclosures

| Box Height (in.) | Catalog Number |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Type 1 -Standard Trim |  |  | Type 3R | Type 3R/12 |
|  | Box | Surface | Flush |  |  |
| 26 | B26 | S26B | F26B | NR26 | WP26 |
| 32 | B32 | S32B | F32B | NR32 | WP32 |
| 38 | B38 | S38B | F38B | NR38 | WP38 |
| 44 | B44 | S44B | F44B | NR44 | WP44 |
| 50 | B50 | S50B | F50B | NR50 | WP50 |
| 56 | B56 | S56B | F56B | NR56 | WP56 |
| 62 | B62 | S62B | F62B | NR62 | WP62 |
| 68 | B68 | S68B | F68B | NR68 | WP68 |
| 74 | B74 | S74B | F74B | NR74 | WP74 |

## Options For Type 1 Trims

Items must be ordered as manual line item on Spartanburg
Hinged trim - Replace " B " suffix with " H " Door-in-door - Replace "B" suffix with "D"
Metal card holder - Replace "B" suffix with " M " on standard trim, add " M " suffix on optional trims
Option For 24" Wide Enclosures with Equal Gutter on Both Sides
24 " wide with equal gutter on both sides, add " 24 " as prefix

Breaker kits and accessories

| Kit No. | Description | Contents |
| :---: | :---: | :---: |
| BBKB32 | BL/BQD 6-pole 3" branch breaker kit | Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware |
| BBKNB32 | NGB 6-pole 3" branch mounting kit | Kit contains breaker support, interphase barriers (3) A/C connectors, (1) B phase connector, hardware |
| BBKED32 | ED 6-pole 3" branch breaker kit | Kit contains breaker support, inter-phase barriers, (3) A/C connectors, (1) B connector, hardware |
| BBKQ1 | 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 |
| DFK1 | BL, BQD, ED Dead front kit for 1" pole breakers | Center strips 3", 6", 9," 15," 21" plus mounting hardware |
| DFFP3 | Dead front filler 3" | $3^{\prime \prime}$ empty space filler and hardware |
| DFFP6 | Dead front 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 |

## Branch Circuit Breakers



NOTE: QJ Breakers are single mounted in nit space and take $6^{\prime \prime}$ of unit space. Limited to (3) per panel max. BL, HBL, HBL and BQD breakers are mounted in common mountings in $3^{\prime \prime}$ or (6) pole increments. ED2, ED4, ED6, HED4 and HHED6 breakers are mounted in common mountings in 3" or (6) pole increments. NGB breakers are mounted in common mounting in $3^{\prime \prime}$ or (6) pole increments.
(1) Two pole breaker is one phase and neutral. Three pole is two phase and neutral. (2) For use on 480Y/277 volt systems not suitable for 480 delta 3 phase 3 wire systems.

Box Size Additions for Optional Features

|  | Main Lugs |  |  |  | Main Breakers |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Options | 125A | 250A | 400A | 600A | 125A <br> Horiz. <br> BL, BQD, <br> ED, NGB | 125A Horiz. <br> CED | 125A <br> Vert. <br> ED | 225A <br> Horiz. <br> QJ | 225A <br> Vert. <br> QJ | 225A <br> Horiz. <br> FD | $\begin{gathered} \text { 250A } \\ \text { Vert. } \\ \text { FD } \end{gathered}$ | $\begin{aligned} & \text { 250A } \\ & \text { Vert. } \\ & \text { CFD } \end{aligned}$ | $\begin{gathered} \text { 400A } \\ \text { JD } \end{gathered}$ | $\begin{aligned} & \text { 400A } \\ & \text { CJD } \end{aligned}$ | $\begin{gathered} \text { 600A } \\ \text { LD } \end{gathered}$ | $\begin{aligned} & \text { 600A } \\ & \text { CLD } \end{aligned}$ |
| *Min. Box Size | 26" | 32" | 38" | 38" | 26" | 32" | 32" | 32" | 38" | 38" | 44" | 50" | 50" | 62" | 56" | 62" |
| 200\% Neutral (lug type) | 0 | 0 | 6 (all) | 6 (all) | 0 | 0 | 0 | N/A | 0 | N/A | 0 | 0 | 0 | 0 | 0 | 0 |
| $\begin{aligned} & \hline \text { Std. Lugs } \\ & \text { (100\% Neut. PNL) } \end{aligned}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CU Lugs (100\% Neut. PNL) | 6 | 6 | 6 | 0 | N/A | N/A | 0 | N/A | 0 | N/A | 0 | 0 | 0 | 0 | 0 | 0 |
| Comp Lugs (100\% Neut. PNL) | 6 | 6 | 6 | 6 | N/A | N/A | 0 | N/A | 0 | N/A | 0 | 0 | 0 | 0 | 0 | 0 |
| Feed-thru Standard Lugs | 6 | 6 | 12 | 12 | 6 | 6 | 6 | N/A | 6 | N/A | 6 | 6 | 12 | 12 | 12 | 12 |
| Feed-thru Cu Lugs | 6 | 6 | 12 | N/A | N/A | N/A | 6 | N/A | 6 | N/A | 6 | 6 | 12 | 12 | N/A | N/A |
| Feed-thru Comp Lugs | 6 | 12 | 12 | N/A | N/A | N/A | 6 | N/A | 6 | N/A | 12 | 12 | 12 | 12 | N/A | N/A |
| Subfeed Standard Lugs | 0 | 6 | 6 | N/A | - | - | - | - | - | - | - | - | N/A | - | - | - |
| Split Bus | 6 | 6 | 6 | 6 | 6 | 6 | 6 | N/A | 6 | N/A | 6 | 6 | 6 | 6 | 6 | 6 |
| (1) FD Subfeed (Horizontal Mtg.) | N/A | 12 | 12 | 12 | N/A | N/A | N/A | N/A | N/A | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| (2) FD Subfeed (Vertical Mtg.) | N/A | 24 | 24 | 24 | N/A | N/A | N/A | N/A | N/A | 24 | 24 | 24 | 24 | N/A | N/A | N/A |
| SPD | 12 | 12 | 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
*Min. Box Size, corresponding to 9" of Unit Space.

## Compression 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) $400-600 \mathrm{kcmil} \mathrm{Cu}$ or (2)\#6-350 kcmil Al/Cu | 6 |
|  | 600 | N/A | (2)\#6-350 kcmil Cu or Cu/Al or $400-600 \mathrm{kcmil} \mathrm{Al} / \mathrm{Cu}$ | 6 |
| Main Breaker | 100 | $\begin{aligned} & \text { ED4, ED6, HED4 } \\ & \text { HHED6, CED6® } \end{aligned}$ | (1)\#14-2/0 AWG Cu or Al | Box must go to 24 " wide on CED6 breaker only <br> Add 6" to box height for $\mathrm{N} \varnothing$ |
|  | 225 | QJ2, QJH2, QJ2H | (1)\#6 AWG - 350 kcmil Cu or Al | Box must go to 24" wide |
|  | 250 | FXD6, HFD6, CFD6 | (1)\#6 AWG - 350 kcmil Cu or Al | 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/O 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 |

## Alternate Lugs

| Style | Amp <br> Rating | Breaker <br> Type | Standard AL <br> Connectors | Box Height <br> Addition |
| :--- | :--- | :--- | :--- | :--- |
| MLO | 400 | N/A | (1) $250-750$ kcmil or <br> (2)\#3/0 AWG -250 kcmil Cu or AI | 6 |
| Main <br> Breaker | 400 | JD6, JXD6, HJD6, <br> CJD6, SJD6, SHJD6, <br> SCJD6 | (1)\#4/0 AWG -750 kcmil Cu or AI | 6 |

## Modifications and Dimensions

## 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 mountedand 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
- Aluminum trims and boxes, Type 1
- NEMA 3R enclosures
- NEMA 3R/12 enclosures
- NEMA 4 enclosures
- NEMA 4X enclosures
- Special keyed locks
- TEY
- TEU1
- Cat 60
- LL803
- LL806
- Yale
- Meters
(Contact application engineering
for space requirements.)
- Panel skirts
- Gaskets between trim and box


## Type P2 Dimensions

Type 1 Box (Box is Symmetrical)


Type 3R and 3R/12 Box


## Flush Mounting


(1) Dimensions are interior of the box. Add $5 / 8^{\prime \prime}$ to width for absolute dimension.

Add $1 / 8^{\prime \prime}$ to height for absolute dimension. Dimensions shown in inches and millimeters [ ].

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## P3 Panelboards

## Features

The innovative P3 panelboard from Siemens is a smaller footprint distribution panel designed for applications that require more large-branch devices than typical lighting panels can support. This panel offers a wide array of factoryassembled options and has the ability to mix breaker frames in unit space up to 225 amps. Bussing options include standard, temperaturerated aluminum and temperature rated (750 ASI1 and 1,000 AlSq") copper. All aluminum bussing in the P3 panel is tin-plated as a standard. Silver-plating is the default for copper bus with tin as an option. Integrated time clocks, bus mounted contactors as mains or sub-mains, split bus and sub-feed lugs (up to 400 amps ) are just a few of the options available in this unique panel.
The panel configurations, defined by unit space, allow for given amperage, main device, and box height. The P3 panel starts with a 56 " high box. Breakers in unit space can be mixed and matched to meet customer requirements. All 1"pole breakers (BI, BOD, NGB, NEB, HEB and ED frames) are mounted in $3^{\prime \prime}$ or 6 -pole increments. Breaker frames, rated 225 amps, are dual mounted in $6^{\prime \prime}$ increments in unit space. Also available are one or two 250 amp frame breakers or one 400 amp frame breaker, mounted as sub-feed devices outside the unit space.

Like other distribution panels, the P3 panel can include blank space for future expansion or modifications. Any expansions or modifications must be in 3"increments. BL, BQD, NGB, NEB, HEB, and ED frame breakers have $3^{\prime \prime}$ 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 $6^{\prime \prime}$ increments for two and three pole single and twin mounted units. Changes in the unit space length for BI , BQD, NGB, NEB, HEB, and ED frame breakers require an additional deadfront center strip kit. Contact your Siemens representative for additional unit space kits.
Voltage - 600 Vac max. 250 V 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 P3 panel is limited to 22 KAIC. Note that the main device may be mounted remote from the panel.
Bussing - The P3 panel has more options to meet market requirements. The standard bussing is temperature rated aluminum. The rating is per the requirements of UL 67 the standard for panelboards. All aluminum bussing is tin-plated. Optional bussing for the P3 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 5 lbs . ( 1 kg ) per inch ( 54 g per mm ) of box height.

Table P3-1 - Gauge Steel of Boxes Fronts, Surface \& Flush

| Dimensions in inches (mm) |  | Gauge Steel |  |
| :--- | :--- | :--- | :--- |
| Width (in.) | Height (in.) | Box | Front |
| $244^{\prime \prime} \mathrm{j}$ | $56-80 \mathrm{j}$ | \#16j | \#14 j |
| $(610) \mathrm{j}$ | $(1422,2032) \mathrm{j}$ |  |  |
| $1 \mathrm{ASI}=$ Amper per square inch |  |  |  |

## Lighting Panelboards

Panel Unit Space To Box Height Requirements

| "B" <br> Dimension Box Height | P3 Panels With Standard Line Lugs. Unit Space (starting with 9" and adding 6" increments) "A" Dimension |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Main Lugs |  |  |  | Main Breakers |  |  |  |  |  |  |
|  | 250A | 400A | 600A | 800A | 250A Horiz. FD | 250A <br> Vert. <br> FD | $\begin{aligned} & \text { 250A } \\ & \text { CFD } \end{aligned}$ | 400A <br> JD | $\begin{aligned} & \text { 400A } \\ & \text { CJD } \end{aligned}$ | $600 \mathrm{~A}$ <br> LD | $\begin{aligned} & \hline \text { 600A } \\ & \text { CLD } \end{aligned}$ |
| 56 | 27 | 21 | 21 | 21 | 21 | 15 | 9 | 9 | - | 9 | - |
| 62 | 33 | 27 | 27 | 27 | 27 | 21 | 15 | 15 | 9 | 15 | 9 |
| 68 | 39 | 33 | 33 | 33 | 33 | 27 | 21 | 21 | 15 | 21 | 15 |
| 74 | 45 | 39 | 39 | 39 | 39 | 33 | 27 | 27 | 21 | 27 | 21 |
| 80 | 51 | 45 | 45 | 45 | 45 | 39 | 33 | 33 | 27 | 33 | 27 |

Main Breaker Selection ${ }^{1}$

| $\begin{aligned} & \text { "B" } \\ & \text { Box Height } \end{aligned}$ | P3 Panels Wit | Maximum interrupting rating (kA) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 240V | 480 V | 600V | Lug wire range |
| 250 | $\begin{aligned} & \text { FD6, FXD6 (STD) } \\ & \text { HFD6, HFXD6 } \\ & \text { CFD6 } \end{aligned}$ | $\begin{array}{\|l\|} \hline 65 \\ 100 \\ 200 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 35 \\ 65 \\ 150 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 18 \\ 25 \\ 100 \\ \hline \end{array}$ | \#6 AWG - 350 Kcmil Cu or <br> \#4 AWG - 30 Kcmil Al |
| 400 | $\begin{aligned} & \hline \text { JXD6 (STD), JD6 } \\ & \text { HJD6, HJXD6 } \\ & \text { SJD6 } \\ & \text { CJD6, SCJD6 } \\ & \hline \end{aligned}$ | $\begin{array}{\|l\|} \hline 65 \\ 100 \\ 65 \\ 200 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 35 \\ 65 \\ 35 \\ 200 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 25 \\ 35 \\ 25 \\ 100 \\ \hline \end{array}$ | $\begin{aligned} & 3 / 0-500 \mathrm{Kcmil} \mathrm{Cu} \\ & \text { or } \\ & 4 / 0-500 \mathrm{Kcmil} \mathrm{Al} \end{aligned}$ |
| 600 | $\begin{aligned} & \hline \text { LXD6 (STD) } \\ & \text { LD6 } \\ & \text { HLD6, HLXD6 } \\ & \text { SLD6 } \\ & \text { SHLD6 } \\ & \text { CLD6, SCLD6 } \\ & \hline \end{aligned}$ | $\begin{array}{\|l\|} \hline 65 \\ 65 \\ 100 \\ 65 \\ 100 \\ 200 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 35 \\ 35 \\ 65 \\ 35 \\ 65 \\ 150 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 25 \\ 25 \\ 35 \\ 25 \\ 35 \\ 100 \\ \hline \end{array}$ | $\begin{aligned} & 3 / 0-500 \mathrm{Kcmil} \mathrm{Cu} \\ & \text { or } \\ & 4 / 0-500 \mathrm{Kcmil} \mathrm{Al} \end{aligned}$ |

Fig. P3-1


Branch Breaker Side Gutters Inches (mm) (Fig. P3-2)

| Reference <br> Letter | Panel Width <br> $24^{\prime \prime}(609)$ |
| :--- | :--- |
| A | $7.750(197)$ |
| B | $7.125(181)$ |
| C | $6.620(168)$ |
| D | $6.440(164)$ |
| E | $6.000(152)$ |
| F | $7.000(178)$ |

## Branch Breaker Side Gutters Inches (mm) (Fig. P3-2)

| Box <br> Height <br> (In.) | Catalog Number |  |  |  | Type 1 <br> Standard Trim |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | Box | Surface | Flush |  |  |
|  | 24WD56 | P3S56 | P3F56 | 24NRD56 | 24WPD56 |
|  | 24WD62 | P3S62 | P3F62 | 24NRD62 | 24WPD62 |
| 68 | 24WD68 | P3S68 | P3F68 | 24NRD68 | 24WPD68 |
| 74 | 24WD74 | P3S74 | P3F74 | 24NRD74 | 24WPD74 |
| 80 | 24WD80 | P3S80 | P3F80 | 24NRD80 | 24WPD80 |

[^0]Table P3-1 - Gauge Steel of Boxes Fronts, Surface \& Flush

| Dimensions in inches $(\mathrm{mm})$ |  |  | Gauge Steel |
| :--- | :--- | :--- | :--- |
| Width | Height | Box | Front |
| $24^{\prime \prime}$ | $56-80$ | $\# 16$ | $\# 14$ |
| -610 | $(1422,2032)$ |  |  |

## Typical Panelboard Wiring Diagrams



3 Phase, 4 Wire, 3 Phase 3 Wire (No SN)
Fig. P3-2


Breaker kits and accessories

| Kit No. | Description | Contents |
| :---: | :---: | :---: |
| BBKB32 | BL/BQD 6-pole 3" branch breaker kit | Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware |
| BBKNB32 | NGB 6-pole 3 branch mounting kit | Kit contains breaker support, interphase barriers (3) A/C connectors, (1) B phase connector, hardware |
| BBKEB32 | NEB/HEB 6 pole 3 branch breaker kit | Kit contains breaker support, interphase barriers (3) A/C connectors, (1) B phase connector, hardware |
| BBKED32 | ED 6-pole 3" branch breaker kit | Kit contains breaker support, inter-phase barriers, (3) A/C connectors, (1) B connector, hardware |
| BBKQ1 | 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 |
| BBKQ2 | Branch breaker kit for 2 and 3-pole QJ twin mount | Kit to contain all connectors and cover plates necessary to mount both 2 and 3 -pole breakers |
| DFFP3 | Deadfront filler 3" | 3 " empty space filler and hardware |
| DFFP6 | Deadfront filler 6" | 6 " empty space filler and hardware |
| P3BK1 | P3 bonding kit | Bonding strap and hardware |
| QF3 | Filler plate for BL, BQD, ED frame branch breaker provisions | 1 " filler plate |
| EBF1 | Filler plate for NEB/HEB branch breaker provision content | 1" filler plate |

Branch Circuit Breakers

${ }^{1}$ BL, HBL, BLH and BQD breakers are mounted in common mountings in $3^{\prime \prime}$ or 6 pole increments.
${ }^{2}$ NGB breakers are counted in common mountings of 3" or 6 pole increments.
${ }^{3}$ For use on $480 \mathrm{Y} / 277$ volt systems. Not suitable for 480 Delta 3 phase 3 wire systems.
${ }^{4}$ NEB/HE breakers are counted in common mountings of $3^{\prime \prime}$ or 6 pole increments.
${ }^{5}$ ED4, ED6, HED4 and HHED6 breakers are mounted in common mountings in 3" or (6) pole increments.
${ }^{6}$ QJ Breakers are single mounted in unit space and take 6 " of unit space. Limited to (3) per panel max.

## Modifications and Dimensions

## 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 mountedand 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
- Aluminum trims and boxes, Type 1
- NEMA 3R enclosures
- NEMA 3R/12 enclosures
- NEMA 4 enclosures
- NEMA 4X enclosures
- Special keyed locks
- TEY
- TEU1
- Cat 60
- LL803
- LL806
- Yale
- Meters
(Contact application engineering for space requirements.)
- Panel skirts
- Gaskets between trim and box


## Type P3 Dimensions

Type 1 Box (Box is Symmetrical)


Type 3R and 3R/12 Box


Flush Mounting

(1) Dimensions are interior of the box. Add $5 / 8^{\prime \prime}$ to width for absolute dimension.

Add $1 / 8^{\prime \prime}$ to height for absolute dimension. Dimensions shown in inches and millimeters [ ].

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[^0]:    ${ }^{1}$ Interchangeable trip main breakers are mounted at top of panel only.

