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# Panelboards

## Introduction

*General*

This generation of panelboards from Siemens offers the high level of engineering and innovation you've come to expect from the leader in power distribution technology. The "P Series" line of panelboards, complimented by the S5 power panels and F2 switchboards, offers a stepped approach to power distribution.

Additional strength has been added to an already rugged and durable panelboard family. Engineered specifically to provide maximum flexibility, the new designs simplify wiring and reduce material requirements making them easier to install and less costly than competitive products. At the heart of these product lines is the extensive research and technology found among Siemens circuit protection devices – both fusible switches and molded case circuit breakers.

The line is anchored by the innovative P1. Featuring the industry's most flexible designs, the P1 virtually eliminates common errors, such as feed direction, and main lug versus main breaker. Increasing distribution is simplified by the ability to add feed-thru lugs. Because of its unique design, the P1 meets the majority of lighting panel needs with only six standard sizes.

Subsequent steps in the P Series offer increased capacity and more design options:

- The highly flexible P2 provides options to fit the most demanding specifications.
- Sized more like a lighting panel, the P3 packs the power of a distribution panel in a space-saving design.
- The powerful S5 is a distribution panel that allows circuit breakers as branch and main devices.
- The F2 anchors the high end of the series. With larger fusible and circuit breaker branch and main devices, the venerable F2 delivers maximum power and flexibility to larger distribution systems.

### Features Overview

P Series lighting panel features include Fas-Latch trim, which is popular among installers; the jacking screw system, that permits adjustments even after wiring has been installed; our exclusive split neutral, and more. Many panelboards have the capability of mixing and matching breakers of different sizes and ratings – or changing from main lug to main breaker, or adding subfeed breakers without changing the box size.

### Key Panelboard Features

	P1	P2	P3	S5	F2
Lighting and Appliance Applications	•	•	•	•	•
Power Panelboard Applications	—	•	•	•	•
Convertible from Top Feed to Bottom Feed or Vice Versa	•	—	—	—	—
Change from Main Lug to Main Breaker or add Subfeed without changing enclosure size	•	—	—	—	—
Space-Saving, Horizontally Mounted Main Breaker	Up To 250 Amps	Up To 250 Amps	—	•	•
Short-Circuit Rating Label Giving Performance Level	•	•	•	•	•
Standard Aluminum Ground Assembly	•	•	•	•	•
Blank End-Walls Standard <sup>Ⓞ</sup>	•	•	•	•	•
Bolted Current-Carrying Parts	•	•	•	•	•
Split Neutral	•	•	•	•	•
Connection Accessible from Front	•	•	•	•	•
Screw-Type Mechanical Lugs	•	•	•	•	•
Time-Reducing Wing Nuts to Secure Interior Without Tools	•	•	•	•	•
Main and Branch Devices Connected With Case-Hardened Hardware	•	•	•	•	•
Flush Lock, Concealed Door Hinges/Trim Screws	•	•	•	—	—
Symmetrical Interior Mounting Studs To Eliminate Upside-Down Mounting of Box	•	•	•	•	•
Interior Height Adjustment for Flush Applications	•	•	•	—	—
Mix and Match Fusible Switch Circuit Breaker Capability	—	—	—	—	—
Shallow Depth	5.75"	5.75"	7.75"	12.75"	12.75"
Accepts a Wide Range of Fuse Types	—	—	—	—	•
Accepts Vacu-Break Fusible Switch	—	—	—	—	•
Accepts a Wide Range of Circuit Breakers	—	•	•	•	—
Optional Compression Lugs	•	•	•	•	•

• Standard

Ⓞ KO's available on P1 and P2 – 5.75" Deep x 20" Wide boxes and P3 - 7.75" deep x 24" wide boxes.

# Panelboards

## General Specifications

General

### Service Entrance Equipment

When a panelboard is used as service entrance equipment, it must be located as close as practicable to the point of entrance of building supply conductors. Panelboards must be identified as "Service Entrance" at the time of order entry in order to be supplied with the appropriate CSA certification and labelling. Panels must include a connector for bonding and grounding neutral conductor. Please consult CSA, CEC and local inspection authorities for specification and installation guidelines.

### Integrated Equipment Short Circuit Rating

The term "Integrated Equipment Short Circuit Rating" refers to the application of series connected circuit breakers in a combination that allows some breakers to have lower individual interrupting ratings than the available fault current. This is permitted as long as the series combination has been tested and certified by CSA. "Series Rated" must be identified at the time of order entry.

### Standards

CSA: C22.2 No.29. Certified under files # 93833  
UL: 67 and 50. Listed by Underwriter's Laboratories, Inc., under "Panelboards" File #E2269, and #E4016.

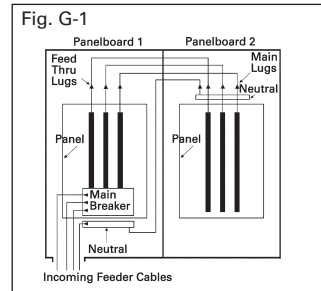
### Wire Connectors

Standard wire connectors in Siemens panels are suitable for copper or aluminum cables rated 60/75 degree. Copper main lugs are a price-added option for most panel types and some Circuit Breakers (check with Siemens sales for availability). It should be noted that most copper lugs will only accept copper cables. Some applications, 100% rated devices in particular, require that the cable and connectors be rated 90 degree but are sized to the 75 degree tables.

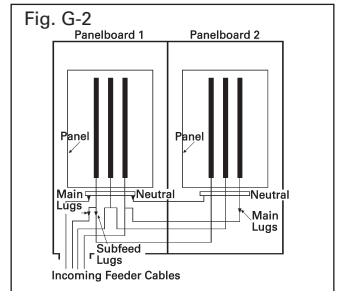
Standard ground connectors are also suitable for copper or aluminum wire. Ground connector assemblies (EGK, IGK) have (7) 1/0 max. and (15) #6 max. connections. The 1/0 holes are capable of connecting up (3) #10 max. wires. Copper ground assemblies (ECGK, ICGK) are rated for copper wire only and have the same wiring capacity as the Al/Cu connectors.

Standard neutrals, like standard main lugs, are also rated for copper or aluminum wire. The neutral cross bar material follows the selection bus. Copper neutral lugs are rated for copper cable only and available as a price added option.

### Lug Data Feed-Thru Lugs



### Subfeed Lugs or Double Lug



Feed-thru lugs are mounted at the opposite end of the main bus from the main lugs or main breaker and are used to connect two or more panelboards to the incoming feeder. The feeder cables are brought into Panelboard 1 and connected to the main lugs or main breaker. Cables interconnecting the two panelboards are connected to the feed-thru lugs in Panelboard 1 and are carried over the main lugs in Panelboard 2. This arrangement could be reversed with the main lugs located at the top and the feed-thru lugs at the bottom of the panel.

Subfeed lugs are mounted directly beside the main incoming lugs and are used to connect two or more panelboards to the incoming feeder. The feeder cables are brought into Panelboard 1 and connected to the main lugs. Another set of cables that are the same size are connected to the subfeed lugs of Panelboard 1 and are carried over the main lugs of Panelboard 2.

# Panelboards

## General Specifications

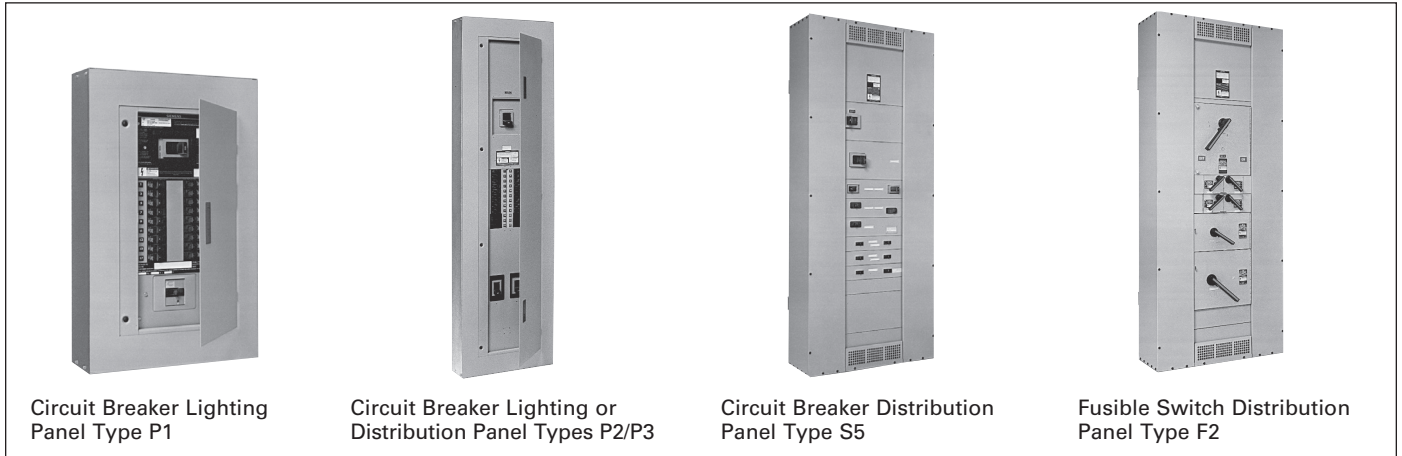
*General*

### Bussing Sequence

Interiors are designed to accommodate top or bottom feed.

All breakers have bolted connections. The panel design provides bracing up to 200,000A IR CSA short circuit rating.

Case-hardened, high performance, thread rolling screws are used on branch bus.



### Panelboard Ratings

Description	P1	P2	P3	S5	F2
<b>Max. Voltage</b>	600V AC Max. 250V DC Max	600V AC Max. 250V DC Max.	600V AC Max. 250V DC Max.	600V AC Max. 250V DC Max.	600V AC Max. 250V DC Max.
<b>System</b>	1-Phase, 2-wire 1-Phase, 3-wire 3-Phase, 3-wire 3-Phase, 4-wire	1-Phase, 2-wire 1-Phase, 3-wire 3-Phase, 3-wire 3-Phase, 4-wire	1-Phase, 2-wire 1-Phase, 3-wire 3-Phase, 4-wire 3-Phase, 3-wire	1-Phase, 3-wire 3-Phase, 4-wire 3-Phase, 3-wire	1-Phase, 3-wire 3-Phase, 4-wire 3-Phase, 3-wire
<b>Mains</b>					
Main Lugs	125A-400A	125A-600A	400A-800A	400A-1200A	800A-1200A
Main Breaker	100A-400A	100A-600A	—	400A-1200A	—
Main Switch	—	—	—	—	200A-600A
<b>Circuits</b>	18, 30, 42	18, 30, 42, 54, 66 78, 90, 102, 114	42, 54, 66, 78, 90	—	—
<b>Branch Ratings</b>	15-100A <sup>①</sup>	15-400A	15-125A	15-1200A MCCB	30A-600A Fusible
<b>Branch Disconnect Devices</b>	BL, BLH, HBL, BQD, BQD6, BLE, BLEH, BLF, BLHF, BAF, BAFH	BL, BLH, HBL, BQD, BQD6, QJ2, QJH2, QJ2H, HQJ2H <sup>②</sup> , ED2, ED4, ED6, HED4, BLE, BLEH, BLF, BLHF, BAF, BAFH, BGL, NGB	BL, BLH, HBL, BQD, BQD6, ED2, ED4, HED4, ED6, BLHF, BAF, BAFH, BGL, NGB, NEB, HEB	All 15-1200A MCCBs and 30-200A VB switches	30-600A VK/VB switches
<b>Subfeed Circuit Breakers<sup>③</sup></b>	ED2, ED4, ED6, HED4, QJ2, QJH2, QJ2-H, FD6, HFD6, FXD6	FD6, HFD6, FXD6, HFXD6	—	—	—
<b>Enclosure Heights - inches (mm)</b>	32, 38, 44 @250 A (813, 965, 1118) 56, 62, 68 @400 A (1422, 1575, 1727)	26, 32, 38, 44, 50, 56, 62, 68, 74 (660-1880)	56, 62, 68, 74, 80 (1422-2032)	60, 75, 90 (1524, 1905, 2286)	60, 75, 90 (1524, 1905, 2286)
<b>Standard Trims</b>	Fas-Latch – 1 Piece Surface or Flush	Fas-Latch – 1 Piece Surface or Flush	Fas-Latch – 1 Piece Surface or Flush	—	—

① P1 can have 1 subfeed breaker. P2 can have up to (2) FD subfeed breakers.

② JD and FD breakers are mounted vertical. Limitations apply.

③ Trim ring provided for flush applications.

④ A maximum of (4) QJ breakers may be mounted in a P2 Panel and are single mounted.

# Panelboards

## General Specifications

*General*

### Typical Panelboard Modifications

Description	Lighting and Distribution Panelboards			Power and Distribution Panelboards	
	P1	P2	P3	S5	F2
<b>Box</b>					
Type 3R/12	•	•	•	•	•
Type 4/4X	•	•	•	•	•
Drip Proof Hood	•	•	•	•	•
Gasketed Trim	•	•	•	•	•
Wider Box	•	•	•	•	•
Deeper Box	—	•	—	•	•
<b>Front</b>					
Hinged Front	•	•	•	•	•
Door-in-Door Front	•	•	•	•	•
Nameplate	•	•	•	•	•
Door with Padlock	•	•	—	—	—
<b>Interior</b>					
Aluminum Equipment Ground Bar	Standard	Standard	Standard	Standard	Standard
Copper Equipment Ground Bar	•	•	•	•	•
Insulated Equipment Ground	•	•	•	•	•
Subfeed Lugs	—	•	•	•	•
Feed-Thru Lugs	•	•	•	•	•
Compression Lugs	•	•	•	•	•
Copper Lugs	•	•	•	•	•
200% Neutral	•	•	•	Check Plant For Availability	Check Plant For Availability
Tin plated Aluminum	Standard	Standard	Standard	Standard	Standard
Tin plated Copper	•	•	•	•	•
Silver plated Copper	—	•	•	•	•
Copper Plating - Tin or Silver	Tin Std./ Silver Optional	Tin Std./ Silver Optional	Tin Std./ Silver Optional	Silver Std./ Tin Optional	Silver Std./ Tin Optional
Circuit Breaker Shunt Trips	•	•	•	•	•
R, J and T Fuse Clips	—	—	—	—	•

• Available as an option.

# Panelboards

## Trim

*Options*



Standard Trim (FAS-Latch)



Door in Door Front



Hinged Front

6

PANELBOARDS

**Also available:**

- Screw to Box Trim
- Piano Hinge Trim
- Trim with Padlock

# Panelboards

## Special Enclosures

*Options*



Type 3R Enclosure



Type 4/4X Enclosure

## Panel Family Portrait



Panelboard Family for Lighting and Appliance and Distribution Panel Applications

# Panelboards

## Factory Assembled

Selection

### Panelboard Coding System

P 1 C 4 2 F X 2 5 0 A T S

#### Type of Panel

P1, P2, P3, S5, F2

#### Voltage and System\*

C = 208Y/120 3Ø 4 W Wye AC - All  
 E = 480Y/277 3Ø 4 W Wye AC - All  
 D = 240 3Ø 3 W Delta AC - All  
 A = 120/240 1Ø 3 W Grounded Neutral AC (2) - All  
 L = 600/347 3Ø 4 W Wye AC - All  
 N = 125V DC 2-Pole Branches Only - All  
 O = 125/250V DC 2-Pole Branches Only - All  
 P = 125/250V DC 2 & 3-Pole Branches - All

\*For any voltage system not listed, check with sales for availability.

#### Circuits

P1 – 18, 30, 42  
 P2 – 18, 30, 42, 54, 66, 78, 90, 102, 114  
 P3 – 42, 54, 66, 78, 90

or

#### Enclosure Height

S5, F2 – 60, 75, 90

#### Main Lug (ML), Main Breaker

(See Main Breaker Table coding below)

#### Amperage

100–400A = P1      400–800A = P3  
 100–600A = P2      400–1200A = S5, F2

#### Bus Material

Aluminum  
 Copper  
 Copper

#### Bus Plating

Tin-Plated  
 Tin-Plated  
 Silver-Plated

#### Letter

A  
 C  
 E

Bus Code	P1	P2	P3	S5	F2
A	•	•	•	•	•
C	•	•	•	n/a	n/a
E	optional	optional	optional	•	•

• Indicates default for this bus type.

#### Feed Location

T = Top  
 B = Bottom

#### Mounting

S = Surface  
 F = Flush. Flush trims extend 3/4" beyond each side of the base box dimensions on P1, P2 and P3 and extend 1" beyond each side of the base box dimensions on.

### Main Breaker Coding

#### (Breaker Type) Code

(BAF) BA, (BAFH) BF, (BQD) BQ, (BQD6) B6, (BL) BL, (BLEH) BE, (BLH) BH, (BLR) BR, (HBL) HB, (BGL-SWI) B1, (BLE-GFCI) BG, (BLF-GFCI) BC, (CED6) CE, (ED2) ED, (ED4) E4, (ED6) E6, (HED4) H4, (BLHF-GFCI) B4, (NGB) NB, (QJ2) QJ, (QJ2H) Q2, (QJH2) QH, (Q3) HQJ2H, (CFD6) CF, (FD6) FD, (FXD6) FX, (HFD6) HF, (HFXD6) H2, (HHFD6) H1, (HHFXD6) H3, (CJD6) CJ, (HHJD6) H4, (HHJXD6) H9, (HJD6) H6, (HJXD6) H5, (HJXD6H) H7, (JD6) J6, (JXD2) JD, (JXD2H) J2, (JXD6) JX, (JXD6H) JH, (SJD6H) SH, (SJD6) SJ, (SHJD6) SX, (SHJD6H) SY, (SCJD6) SC, (CLD6) CL, (HLD6) HL, (LD6) L6, (LXD6) LX, (SLD6) SL, (SHLD6) S2, CM, (CMD6H) CH, (HMD6) HM, (HMXD6) HR, (HMXD6H) HS, (MD6) MD, (MXD6) MX, (MXD6H) MH, SCMD6 (SO), SCMD6H (SQ), SMD6 (SM), SMD6H (AX), SHMD6 (S5), SHMD6H (S6)(CND6) CN, (CND6H) C6, (HND6) HN, (HNXD6) HT, (HNXD6H) HX, (ND6) ND, (NXD6) NX, (NXD6H) NT, SCND6 (SR), SCND6H (ST), SND6 (SN), SHND6 (AD), SND6H (AY)



# Panelboards

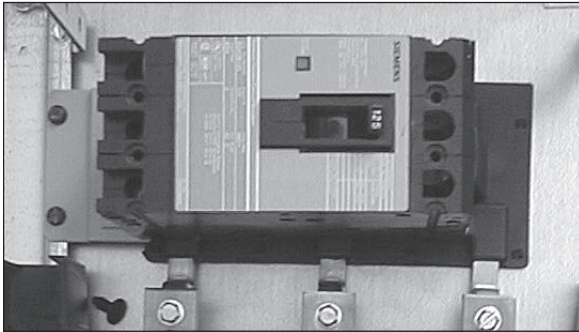
## Type P1 Panelboards

*Reference*

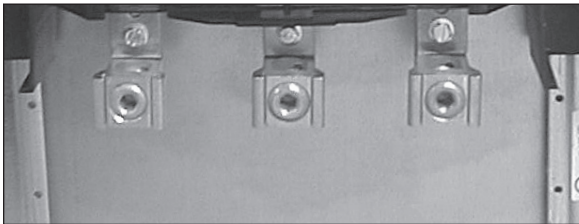
### Features and Benefits

The standard Siemens P1 panelboard has some unique features that make it easier to design for an engineer, easier to reconfigure in the field for a contractor, and easier to upgrade and maintain for the owner. What makes it different is its split neutral design and its open ended bus. In the Siemens panel, instead of the common single neutral bus on one end, there is a neutral bus on both sides that is cross-bussed. This makes branch wiring simpler and cleaner – the lead lengths for line and neutral can now be made the same, creating more room and a neater installation. It also allows access to both ends of the bus as a standard feature – this provides the flexibility to make changes in the field, even if it wasn't part of the original configuration.

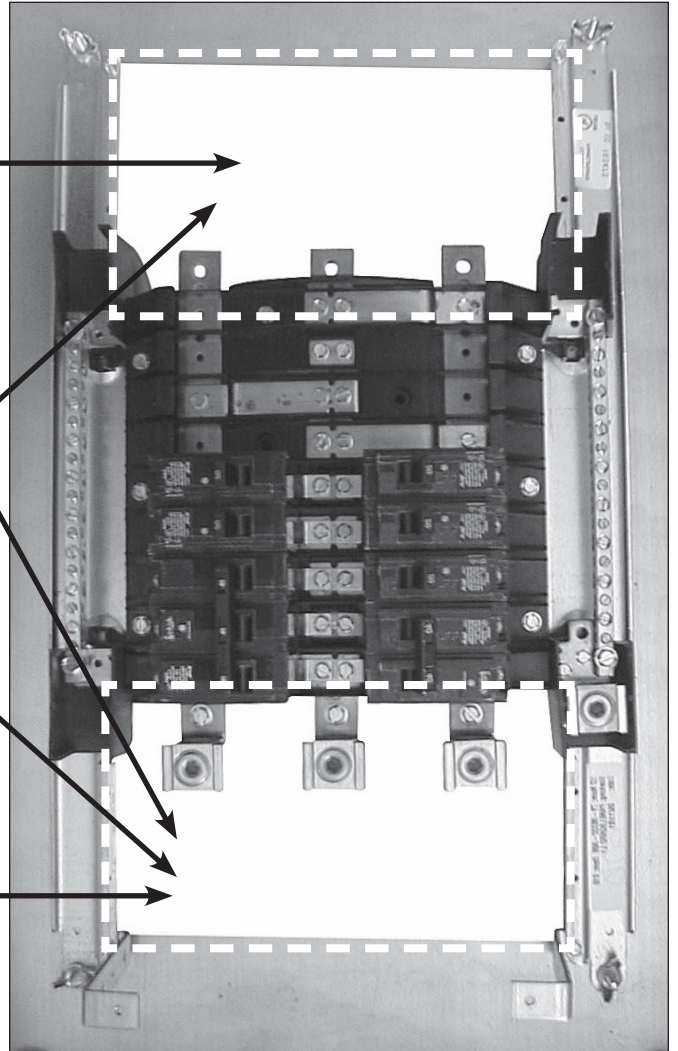
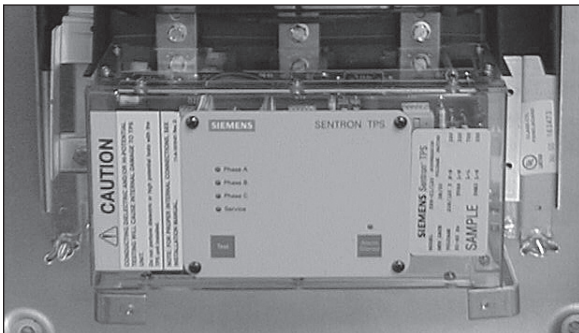
#### MAIN BREAKER or SUB-FEED BREAKER



#### MAIN LUGS or FEED-THROUGH LUGS



#### INTEGRAL BUS MOUNTED SPD



The following can be done to a standard P1 panelboard **in the field** with no modifications:

- Change from top fed to bottom fed
- Add feed-through lugs
- Add an Integral bus-mounted SPD
- Add a sub feed breaker up to 250 amps
- Change from Main Lugs to Main Breaker
- Change from Main Breaker to Main Lugs
- Panel may have up to two ground assemblies. Options are standard aluminum, copper, insulated or isolated aluminum or copper. Mounting provisions in opposing corners of the box are standard. Any of these options may be added after installation.

# Panelboards

## Type P1 Panelboards

**Voltage** - 600Y/347V AC Max.  
250V DC Max.

**Amperage** - 400 amp Max. Mains  
100 amp Max. Branch

**Short Circuit Rating** -  
100,000 A @ 240Vac\*

**Branch breaker symmetrical interrupting capacity based on CSA's test procedures**

Feed thru and subfeed lugs may result in lower interrupting ratings if not protected by a main device. Consult sales office.

### Panelboards

Certified by CSA under file #165172 Listed by Underwriters' Laboratories, Inc., under "Panelboards" File #E2269 for interiors and #E4016 for boxes and fronts.

### Service

1-phase 2-wire - 120 Vac, 240 Vac, 24 Vdc, 48 Vdc, 125 Vdc

1-phase 3-wire - 120/240 Vac, 125/250 Vdc

3-phase 3-wire - 600Y/347 Vac. and 480Y/277 (when derived from 3-phase 4-wire system), 240 Vac, 120 Vac, 125/250 Vdc

3-phase 4-wire - 208Y/120 Vac, 240/120 Vac, 480Y/277 Vac, 600Y/347 Vac.

### Enclosure

Type 1 enclosure 20" wide x 5.75" deep.

- End walls are blank as standard. End walls with knockouts are available.

### Panelboard Trims and Doors

Standard panelboards are furnished with trim featuring concealed fasteners and hinges with a flush door lock. All are factory-assembled for ease of installation. Trims are fabricated from code gauge steel and finished ANSI-61 grey paint. See page 6-6 for optional fronts.

### Main Breakers

BL, BLH, HBL, BQD, BQD6, ED2, NGB, ED4, ED6, HED4, QJ2, QJH2, QJ2-H, FXD6, FD6, HFD6, JXD6, JD6, HJXD6, HJD6. (All main breakers except 400 amp frame are mounted horizontal.)

\* IR rating will depend on the type of main breaker applied or if main breaker is "Series Rated" with an up stream protective device (circuit breaker or fuse).

Ⓞ P1 400 amp main breaker panels have wire bending space available for 600 kcmil.  
Ⓞ 400A main breaker is vertical mounted.

### Main Breaker Panel Connectors

Ampere Rating	Connector Wire Range
100	(1) #14 - 1/0 AWG Al/Cu
125	(1) #4 - 1/0 AWG Al/Cu
225	(1) #4 AWG - 300 kcmil Al/Cu
250	(1) #4/0 AWG - 350 kcmil Al or (1) #6/0 AWG - 350 kcmil Cu
400 <sup>Ⓞ</sup>	(1) #4/0 AWG - 500 kcmil Al or (2) #3/0 AWG - 500 kcmil Cu

Connector ranges indicated do not apply to all main breaker types. Refer to molded case circuit breaker standard pressure wire connector chart (Section 5) for the connector range of a specific frame.

### Main Lug Connectors (phase)

125	(1) #6 AWG - 350 kcmil Al/Cu
250	(1) #6 AWG - 350 kcmil Al/Cu
400	(2) 1/0 AWG - 250 kcmil Al/Cu or (1) #2 AWG - 600 kcmil Al/Cu

### Main Breaker Wire Bending Space - Inches (mm)

Main Breaker	Side Gutter		Neutral Location
	20" w/box	24" w/box (optional)	20" w/box
BL, BLH, HBL, BQD, BQD6	8.500 (216)	10.500 (267)	11.500 (292)
NGB	8.000 (203)	10.000 (254)	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)
JXD6 <sup>Ⓞ</sup> , HJD6 <sup>Ⓞ</sup>	15.000 (381)	15.000 (381)	26.750 (680)

### Main Lug End Gutter Dimensions - Inches (mm)

Amp Rating	End Gutter	Neutral Location
125	10.500 (267)	11.500 (292)
250	10.500 (267)	11.500 (292)
400 <sup>Ⓞ</sup>	25.500 (648)	26.750 (680)

Ⓞ Feed-thru lug and neutral wire bending space is 15.000" (381mm) and 16.250" (413mm) respectively on 400A panel.  
Ⓞ P1 panel limited to (1) subfeed 250 amperes max.

## General

### Side Gutter Wiring Space - Inches (mm)

Reference Letter	Panel Width 20"	Panel Width 24" (Optional)
A	6.375 (162)	7.375 (187)
B	5.500 (140)	7.500 (191)
C	6.125 (156)	8.125 (206)
D <sup>Ⓞ</sup>	6.500 (165)	8.500 (216)
E	5.250 (133)	7.250 (184)

### Branch Breaker Side Gutters

← A →	BL, BLH, HBL BLF, BLHF	BL, BLH, HBL BLF, BLHF	← A →
← B →	BQD6, BQD	BQD6, BQD	← B →
← C →	ED2, ED4, ED6, HED4		
← D →	QJ2, QJH2, QJ2-H		
← E →	FXD6, FD6, HFD6 <sup>Ⓞ</sup>		

### Weight – Approximate

Total panelboard weight when filled with a normal quantity of breakers and accessories is:

- About 3 lbs. (1kg) per inch (54g per mm) of box height

### Gauge Steel Boxes

Width - in (mm)	Height - in (mm)	Gauge Steel
20 (508)	All	#14

### Gauge Steel Trims - Surface, Flush

20 (508)	All	#14
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### Series Connected Short Circuit Ratings

The term "Series Connected Short Circuit Rating" refers to the application of series connected circuit breakers in a combination that allows some breakers to have lower individual interrupting ratings than the available fault current. This is permitted as long as the series combination has been tested and certified by CSA. Series ratings must be specified on order at time of entry.

See Circuit Breaker Section of this book for combinations available.

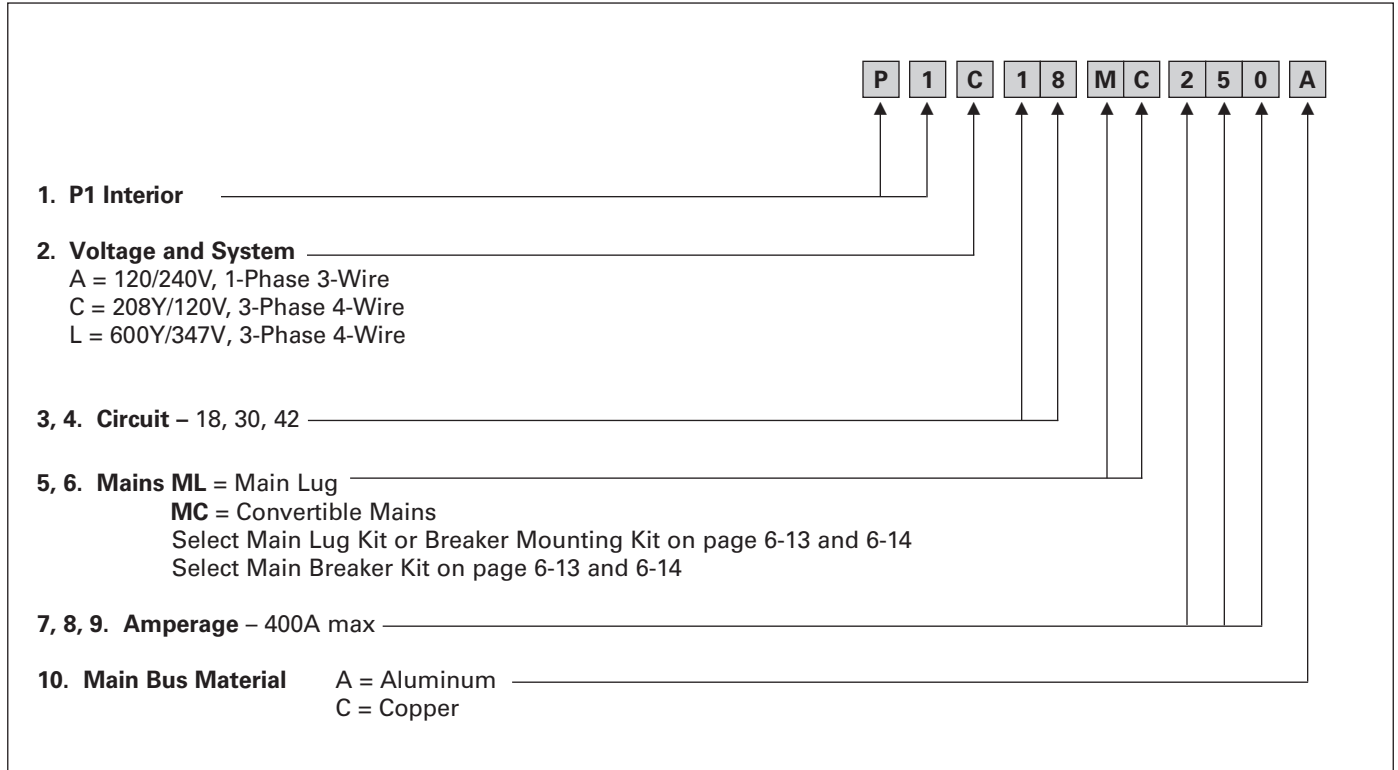
# Panelboards

## Distributor Stock - Type P1

*Reference*

### Interior Numbering System

Type P1 Unassembled Panels are completely convertible from main lug to main breaker and vice-versa. Additionally, feed-thru lugs or a subfeed circuit breaker up to 250 amperes can be added without increasing the box height.



**Note:** Standard bussing in P1 panels is tin plated for aluminum and copper.  
Standard bus is temperature rated to the maximum amperage in the panel.

### Branch Breakers

Panel Type	Voltage (Max.)	Breaker Type	Power Product Catalogue Page
P1	240	BL, BLH, HBL, BQD, BQD6	See section 5
	600/347	BQD, BQD6	

# Panelboards

## Distributor Stock - Type P1

*Selection*

Interior, Box and Trim selection

### 400A Max. — 20" Wide x 5.75" Deep

1. Determine voltage, system, amperage, bussing material and type of main entry to select the appropriate Interior from the table below.
2. Select the type of box and trim needed and select the appropriate height based on the number of circuits.

3. Select main lug kit or main breaker kit.  
Note: Main/Subfeed breaker mounting kits may be ordered with or without breaker, see pages 6-13 and 6-14 for selection.
4. List required branch circuit breakers:  
Type BL, BQD or BQD6 breakers.
5. Select accessories on page 6-15.



### Type P1 Unassembled Panelboards

Interiors Only – Less Branch Breakers					Boxes			Trims	
Amperes Rating Mains	Max. No. of Circuits	Main Bus Material	Convertible Main	Main Lug	Height - Inches (mm)	Type 1	Type 3R/12 <sup>①</sup>	Surface	Flush <sup>②</sup>
<b>1-Phase, 3-Wire</b>					<b>120/240V</b>				
250	18	Al	P1A18MC250A	P1A18ML250A	32 (813)	B32	WP32	S32B	F32B
	30		P1A30MC250A	P1A30ML250A	38 (965)	B38	WP38	S38B	F38B
	42		P1A42MC250A	P1A42ML250A	44 (1118)	B44	WP44	S44B	F44B
400	18	Al	P1A18MC400A	P1A18ML400A	56 (1422)	B56	WP56	S56B	F56B
	30		P1A30MC400A	P1A30ML400A	62 (1575)	B62	WP62	S62B	F62B
	42		P1A42MC400A	P1A42ML400A	68 (1727)	B68	WP68	S68B	F68B
250	18	Cu	P1A18MC250C	P1A18ML250C	32 (813)	B32	WP32	S32B	F32B
	30		P1A30MC250C	P1A30ML250C	38 (965)	B38	WP38	S38B	F38B
	42		P1A42MC250C	P1A42ML250C	44 (1118)	B44	WP44	S44B	F44B
400	18	Cu	P1A18MC400C	P1A18ML400C	56 (1422)	B56	WP56	S56B	F56B
	30		P1A30MC400C	P1A30ML400C	62 (1575)	B62	WP62	S62B	F62B
	42		P1A42MC400C	P1A42ML400C	68 (1727)	B68	WP68	S68B	F68B
<b>3-Phase, 4-Wire</b>					<b>208Y / 120V</b>				
250	18	Al	P1C18MC250A	P1C18ML250A	32 (813)	B32	WP32	S32B	F32B
	30		P1C30MC250A	P1C30ML250A	38 (965)	B38	WP38	S38B	F38B
	42		P1C42MC250A	P1C42ML250A	44 (1118)	B44	WP44	S44B	F44B
400	18	Al	P1C18MC400A	P1C18ML400A	56 (1422)	B56	WP56	S56B	F56B
	30		P1C30MC400A	P1C30ML400A	62 (1575)	B62	WP62	S62B	F62B
	42		P1C42MC400A	P1C42ML400A	68 (1727)	B68	WP68	S68B	F68B
250	18	Cu	P1C18MC250C	P1C18ML250C	32 (813)	B32	WP32	S32B	F32B
	30		P1C30MC250C	P1C30ML250C	38 (965)	B38	WP38	S38B	F38B
	42		P1C42MC250C	P1C42ML250C	44 (1118)	B44	WP44	S44B	F44B
400	18	Cu	P1C18MC400C	P1C18ML400C	56 (1422)	B56	WP56	S56B	F56B
	30		P1C30MC400C	P1C30ML400C	62 (1575)	B62	WP62	S62B	F62B
	42		P1C42MC400C	P1C42ML400C	68 (1727)	B68	WP68	S68B	F68B
<b>3-Phase, 4-Wire</b>					<b>600Y / 347V</b>				
250	18	Al	P1L18MC250A	P1L18ML250A	32 (813)	B32	WP32	S32B	F32B
	30		P1L30MC250A	P1L30ML250A	38 (965)	B38	WP38	S38B	F38B
	42		P1L42MC250A	P1L42ML250A	44 (1118)	B44	WP44	S44B	F44B
400	18	Al	P1L18MC400A	P1L18ML400A	56 (1422)	B56	WP56	S56B	F56B
	30		P1L30MC400A	P1L30ML400A	62 (1575)	B62	WP62	S62B	F62B
	42		P1L42MC400A	P1L42ML400A	68 (1727)	B68	WP68	S68B	F68B
250	18	Cu	P1L18MC250C	P1L18ML250C	32 (813)	B32	WP32	S32B	F32B
	30		P1L30MC250C	P1L30ML250C	38 (965)	B38	WP38	S38B	F38B
	42		P1L42MC250C	P1L42ML250C	44 (1118)	B44	WP44	S44B	F44B
400	18	Cu	P1L18MC400C	P1L18ML400C	56 (1422)	B56	WP56	S56B	F56B
	30		P1L30MC400C	P1L30ML400C	62 (1575)	B62	WP62	S62B	F62B
	42		P1L42MC400C	P1L42ML400C	68 (1727)	B68	WP68	S68B	F68B

① Hinged door included with type 3R/12 enclosures.

② Flush trims extend 3/4" beyond each side of the base box dimensions.

# Panelboards

## Distributor Stock - Type P1

*Selection*

### Main Entry Kit Selection

#### Main Breaker Mounting Kits with Breakers

Catalogue Number	Description	Max. Interrupting Rating (kA)		
		240V	480V	600V
MBKBL12100	Kit with 2-Pole BL 100A Breaker	10	–	–
MBKBL33100	Kit with 3-Pole BL 100A Breaker	10	–	–
MBKQJ12225	Kit with 2-Pole QJ2 225A Breaker	10	–	–
MBKQJ33150	Kit with 3-Pole QJ2 150A Breaker	10	–	–
MBKQJ33200	Kit with 3-Pole QJ2 200A Breaker	10	–	–
MBKQJ33225	Kit with 3-Pole QJ2 225A Breaker	10	–	–
MBKED33100	Kit with 3-Pole ED6 100A Breaker	65	25	18
MBKED33125	Kit with 3-Pole ED6 125A Breaker	65	25	18
MBKFD33200	Kit with 3-Pole FXD6 200A Breaker	65	35	22
MBKFD33225	Kit with 3-Pole FXD6 225A Breaker	65	35	22
MBKFD33250	Kit with 3-Pole FXD6 250A Breaker	65	35	22
MBKHF33250	Kit with 3-Pole HFD6 250A Breaker	100	65	25
MBKJD33400 <sup>①</sup>	Kit with 3-Pole JXD6 400A Breaker	65	35	25

#### Breaker Mounting Kits without Breaker – Main or Subfeed (250A max.)

Amp Rating	Breaker Types <sup>②</sup>	Service	Catalogue Number
100	BL, BLH, HBL	1 Phase	MBKBL1
		3 Phase	MBKBL3
125	ED2, ED4, ED6, HED4	1 Phase	MBKED1
		3 Phase	MBKED3
225	QJ2, QJH2, QJ2-H	1 Phase	MBKQJ1
		3 Phase	MBKQJ3
250	FXD6, FD6, HFD6	1 Phase	MBKFD1
		3 Phase	MBKFD3
400 <sup>①</sup>	JD6, JXD6, HJD6	1 Phase	MBKJD1
		3 Phase	MBKJD3

#### Lug Kits – Main and/or Feed-Thru

Amp Rating	Material	Wire Range	Service	Catalogue Number
250	Al	(1) #6 AWG - 350 kcmil Al/Cu	1 Phase	MLKA1
			3 Phase	MLKA3
	Cu	(1) #6 AWG - 350 kcmil Cu	1 Phase	MLKC1
			3 Phase	MLKC3
400	Al	(2) 1/0 - 250 kcmil Al/Cu or (1) #2 AWG - 600 kcmil Al/Cu	1 Phase	4MLKA1
			3 Phase	4MLKA3
	Cu	(1) 1/0 AWG - 600 kcmil Cu or (2) 1/0 AWG - 4/0 AWG Cu	1 Phase	4MLKC1
			3 Phase	4MLKC3



<sup>①</sup> 400 amp kits is for main only - not allowed as for subfeed breaker.

<sup>②</sup> Main breaker selection p. 6-14.



# Panelboards

## Circuit Breaker / Lighting and Distribution

Selection

### Type P1 Panelboards

#### Main Breaker Selection

Ampere Rating	Breaker Type	Maximum Interrupting Rating (kA)			Catalogue Number	Available Trip Values
		240 Vac	480/277 Vac	600Y/347 Vac		
70	BQD6	65	—	10	B6	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
100	BL	10	—	—	BL	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	BLH	22	—	—	BH	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	HBL	65	—	—	HB	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	BQD	65	14	—	BQ	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	ED2	10	—	—	E2	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
125	NGB	100	25	14	NB	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
	ED4	65	18	—	E4	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
	ED6	65	25	18	E6	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
	HED4	100	42	—	H4	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 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
	QJ2-H	42	—	—	Q2	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
	FD6	65	35	22	FD	70, 80, 90, 100, 110, 125, 150, 175, 200, 225
	FXD6	65	35	22	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
250	FD6	65	35	22	FD	250
	FXD6	65	35	22	FX	250
	HFD6	100	65	25	HF	250
400	JD6	65	35	25	J6	200, 225, 250, 300, 350, 400
	JXD6	65	35	25	JX	200, 225, 250, 300, 350, 400
	HJD6	100	65	35	H6	200, 225, 250, 300, 350, 400

#### Subfeed Breakers<sup>①②</sup>

Breaker Type	Number of Poles	Max. Interrupting Rating (kA)			Available Trip Values
		240V	480Y/277V	600Y/347V	
QJ2	2, 3	10	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
QJH2	2, 3	22	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
QJ2H	2, 3	42	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
ED2	2, 3	10	—	—	15 <sup>③</sup> , 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
ED4	2, 3	65	18	—	15 <sup>③</sup> , 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
ED6	2, 3	65	25	18	15 <sup>③</sup> , 20, 25, 30, 35, 40, 45, 50, 60 <sup>③</sup> , 70 <sup>③</sup> , 80 <sup>③</sup> , 90 <sup>③</sup> , 100 <sup>③</sup> , 110 <sup>③</sup> , 125 <sup>③</sup>
HED4	2, 3	100	42	—	15 <sup>③</sup> , 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
FXD6	2, 3	65	35	22	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250
FD6	2, 3	65	35	22	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250
HFD6	2, 3	100	65	25	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250

**Note:** For detailed circuit breaker information please consult section 5. For "Series Rating" tested combinations, please consult the Siemens Series Rated Combination Guide p. 5-84.

<sup>①</sup> Please consult CSA, CEC and local inspection authorities for specification and installation guidelines.

<sup>②</sup> No increase in box height, space is already built into P1 panel.

<sup>③</sup> Amperage available in 3 pole breaker only.

# Panelboards

## Circuit Breaker/Lighting and Distribution

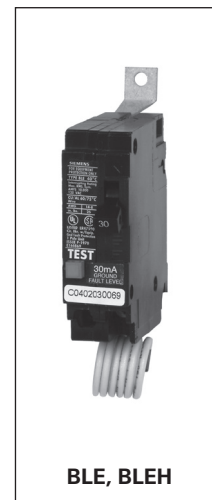
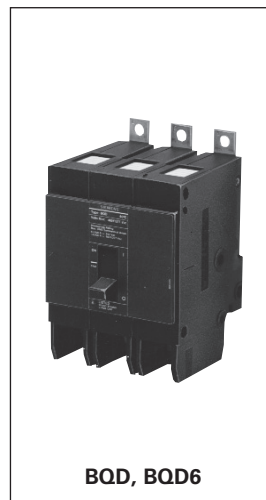
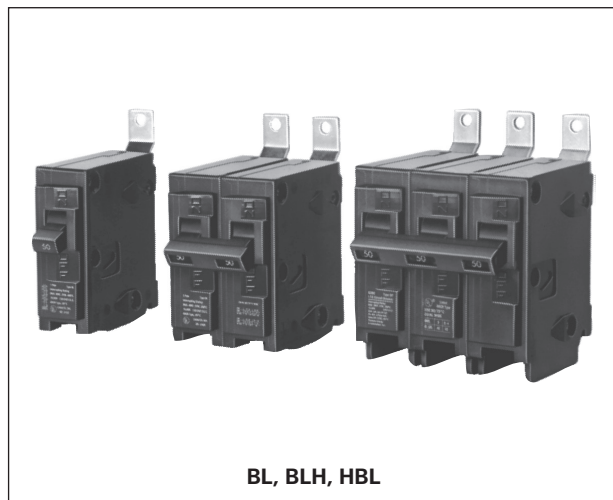
*Selection*

### Branch Breakers Selection Guide for P1

1. Select branch breaker type based on interrupting rating required.
2. Select required amperage.
3. Select number of poles.
4. Select branch breaker catalogue numbers on page 6-16.
5. Select ground bar and filler to cover any unused positions.  
(See replacement parts & accessories on page 6-17.)

### Branch Circuit Breakers

Breaker Type	Number of Poles	Max. Interrupting Rating (kA)							Available Trip Values
		120V	120/240V	240V	277V	480/277V	347V	600/347V	
BL	1	10	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
	2	—	10	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	3	—	—	10	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
BLH	1	22	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
	2	—	22	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	3	—	—	22	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
HBL	1	65	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70
	2	—	65	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100
	3	—	—	65	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100
BLR	2	—	—	10	—	—	—	—	15, 20, 30, 40, 50, 60, 70, 80, 90, 100
BLF	1	10	—	—	—	—	—	—	15, 20, 25, 30
	2	—	10	—	—	—	—	—	15, 20, 30, 40, 50, 60
BLHF	1	22	—	—	—	—	—	—	15, 20, 25, 30
	2	—	22	—	—	—	—	—	15, 20, 30, 40, 50, 60
BLE	1	10	—	—	—	—	—	—	15, 20, 30
	2	—	10	—	—	—	—	—	15, 20, 30, 40, 50, 60
BLEH	1	22	—	—	—	—	—	—	15, 20, 30
	2	—	22	—	—	—	—	—	15, 20, 30, 40, 50, 60
BAF	1	10	—	—	—	—	—	—	15, 20
BAFH	1	22	—	—	—	—	—	—	15, 20
BQD	1	65	—	—	14	—	—	—	15, 20, 25, 30, 35, 45, 50, 60, 70, 80, 90, 100
	2	—	—	65	—	14	—	—	15, 20, 25, 30, 35, 45, 50, 60, 70, 80, 90, 100
	3	—	—	65	—	14	—	—	15, 20, 25, 30, 35, 45, 50, 60, 70, 80, 90, 100
BQD6	1	65	—	—	—	—	10	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
	2	—	—	65	—	—	—	10	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
	3	—	—	65	—	—	—	10	15, 20, 25, 30, 35, 40, 45, 50, 60, 70



# Panelboards

## Circuit Breaker/Lighting and Distribution

Selection

Branch Breakers Selection for P1

### BL Branch Breakers – 10,000A IR<sup>①</sup>

Ampere Rating	Catalogue Number			
	1-Pole 120/240V	2-Pole 120/240V	2-Pole 240V	3-Pole 240V
15	B115	B215	B215R	B315
20	B120	B220	B220R	B320
25	B125	B225	B225R	B325
30	B130	B230	B230R	B330
35	B135	B235	B235R	B335
40	B140	B240	B240R	B340
45	B145	B245	B245R	B345
50	B150	B250	B250R	B350
55	B155	—	—	—
60	B160	B260	B260R	B360
70	B170	B270	B270R	B370
80	—	B280	B280R	B380
90	—	B290	B290R	B390
100	—	B2100	B2100R	B3100

### BLH Branch Breakers – 22,000A IR<sup>①</sup>

Ampere Rating	Catalogue Number		
	1-Pole 120/240V	2-Pole 120/240V	3-Pole 240V
15	B115H	B215H	B315H
20	B120H	B220H	B320H
25	B125H	B225H	B325H
30	B130H	B230H	B330H
35	B135H	B235H	B335H
40	B140H	B240H	B340H
45	B145H	B245H	B345H
50	B150H	B250H	B350H
55	B155H	B255H	B355H
60	B160H	B260H	B360H
70	B170H	B270H	B370H
80	—	B280H	B380H
90	—	B290H	B390H
100	—	B2100H	B3100H

### HBL Branch Breakers – 65,000A IR<sup>①</sup>

Ampere Rating	Catalogue Number		
	1-Pole 120/240V	2-Pole 120/240V	3-Pole 240V
15	B115HH	B215HH	B315HH
20	B120HH	B220HH	B320HH
25	B125HH	B225HH	B325HH
30	B130HH	B230HH	B330HH
35	B135HH	B235HH	B335HH
40	B140HH	B240HH	B340HH
45	B145HH	B245HH	B345HH
50	B150HH	B250HH	B350HH
55	B155HH	B255HH	B355HH
60	B160HH	B260HH	B360HH
70	B170HH	B270HH	B370HH
80	—	B280HH	B380HH
90	—	B290HH	B390HH
100	—	B2100HH	B3100HH

### BQD6 Branch Breakers – 10,000A IR max. @ 600/347 Vac

Ampere Rating	Catalogue Number		
	1-Pole 347V	2-Pole 600Y/347V	3-Pole 600Y/347V
15	BQD6115	BQD6215	BQD6315
20	BQD6120	BQD6220	BQD6320
25	BQD6125	BQD6225	BQD6325
30	BQD6130	BQD6230	BQD6330
35	BQD6135	BQD6235	BQD6335
40	BQD6140	BQD6240	BQD6340
45	BQD6145	BQD6245	BQD6345
50	BQD6150	BQD6250	BQD6350
60	BQD6160	BQD6260	BQD6360
70	BQD6170	BQD6270	BQD6370

### AFCI – Branch Feeder

Breaker Type	1-Pole 120/240V	Catalogue Number
BAF - 10,000 IR 1-pole	15 20	B115AF B120AF
BAFH - 22,000 IR 1-pole	15 20	B115AFH B120AFH

### GFCI Personnel Protection (5mA)

Breaker Type	1-Pole 120/240V	Catalogue Number
BLF - 10,000 IR 1-pole	15 20 25 30	BF115 BF120 BF125■ BF130
BLF - 10,000 IR 2-pole	15 20 30 40 50 60	BF215 BF220 BF230 BF240■ BF250■ BF260■
BLHF - 22,000 IR 1-pole	15 20 25 30	BF115H BF120H BF125H■ BF130H
BLHF - 22,000 IR 2-pole	15 20 30 40 50 60	BF215H BF220H BF230H BF240H■ BF250H■ BF260H■

### GFCI Equipment Protection (30mA)

Breaker Type	1-Pole 120/240V	Catalogue Number
BLE - 10,000 IR 1-pole	15 20 30	BE115 BE120 BE130
BLE - 10,000 IR 2-pole	15 20 30 40 50 60	BE215 BE220 BE230 BE240 BE250 BE260■
BLEH - 22,000 IR 1-pole	15 20 30	BE115H BE120H BE130H
BLEH - 22,000 IR 2-pole	15 20 30 40 50 60	BE215H BE220H BE230H BE240H BE250H BE260H■

### BQD Branch Breakers – 65,000A IR max. @ 240 Vac<sup>②</sup>

Ampere Rating	Catalogue Number		
	1-Pole 120/240V	2-Pole 120/240V	3-Pole 240V
15	BQD115	BQD215	BQD315
20	BQD120	BQD220	BQD320
25	BQD125	BQD225	BQD325
30	BQD130	BQD230	BQD330
35	BQD135	BQD235	BQD335
40	BQD140	BQD240	BQD340
45	BQD145	BQD245	BQD345
50	BQD150	BQD250	BQD350
60	BQD160	BQD260	BQD360
70	BQD170	BQD270	BQD370
80	BQD180	BQD280	BQD380
90	BQD190	BQD290	BQD390
100	BQD1100	BQD2100	BQD3100

■ Built to order.

① To add shunt trip to BL breakers, see page 6-18 Accessories.

② To add shunt trip to BQD breakers, see page 6-18 Accessories.



# Panelboards

## Modifications and Additions

### Type P1 Panelboards

#### Copper Neutral Lug Kits - 250A

Number of Circuits	Description	Catalogue Number
18		CNLK18
30	2 Branch Neutral Strips, 1 Main Neutral Lug, Hardware	CNLK30
42		CNLK42

#### 200% Copper Neutral Lug Kits - 250A

18		2NLK18
30	2 Branch Neutral Strips, 2 Main Neutral Lug, Hardware	2NLK30
42		2NLK42

#### 200% Copper Neutral Lug Kits - 400A

18		42NLK18
30	2 Branch Neutral Strips, 1 Main 600 kcmil Neutral Lug, Hardware	42NLK30
42		42NLK42

#### 250A Branch Neutral Connections

No. of circuits	Branch Neutral Lugs - Wire Size range	No. of connections per neutral bar	
		Al Neutral bar Std	Cu Neutral bar
18 circuits	(1) #6 - 350 MCM Al/Cu	(2) #4 - #14 AWG (8) 1/0 - #14 AWG	(9) #4 - #14 AWG (8) 1/0 - #14 AWG
30 circuits		(2) #4 - #14 AWG (15) 1/0 - #14 AWG	(16) #4 - #14 AWG (15) 1/0 - #14 AWG
42 circuits		(22) 1/0 - #14 AWG	(23) #4 - #14 AWG (22) 1/0 - #14 AWG

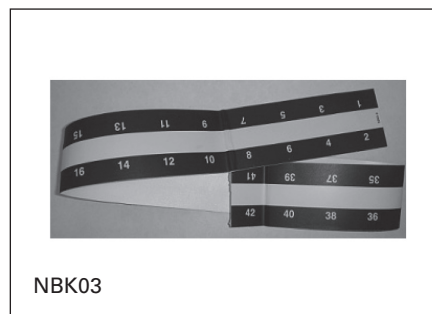
#### 400A Branch Neutral Connections

No. of circuits	Branch Neutral Lugs - Wire Size range	No. of connections per neutral bar	
		Al Neutral bar Std	Cu Neutral bar
18 circuits	(1) #2 - 600 MCM Al/Cu	(2) #4 - #14 AWG (8) 1/0 - #14 AWG	(9) #4 - #14 AWG (8) 1/0 - #14 AWG
30 circuits		(2) #4 - #14 AWG (15) 1/0 - #14 AWG	(16) #4 - #14 AWG (15) 1/0 - #14 AWG
42 circuits		(22) 1/0 - #14 AWG	(23) #4 - #14 AWG (22) 1/0 - #14 AWG

#### Type P1 Miscellaneous Parts and Accessories

Catalogue Number	Description
12-1110-01	1 Directory card for 1-42 circuits
11-1824-01	1 Plastic directory card holder
MCHK	1 Metallic directory card holder
10FLHX2	200 BL/BQD breaker line side screws
10FLHX5	500 BL/BQD breaker line side screws
FPLK2	2 Spare Fas-latch trim locks with 2 keys
BK1	1 Bonding kit for P1 panels
EGK	1 Aluminum non-insulated ground bar
ECGK	1 Copper non-insulated ground bar
EWK1	1 End Wall with knockouts (20" W x 5.75" D)
IGK	1 Insulated Al ground bar
ICGK	1 Insulated Cu ground bar
IMK1	1 Interior adjusting kit
JCK24	24 Trim screws and 24 trim clips
NBK03	1 Number Strip 1-42 circuits
QF3-UL	1 Filler Plate
SDKN	1 Dripshield kit (20" W x 5.75" D)
TPS9IKITP1	1 P1 mounting bracket for SPD TPS3 09

## Selection



#### Type P1 Spare Part Kit

Catalogue Number	Content
MHKP1	<ul style="list-style-type: none"> <li>8 trim screws</li> <li>8 trim clips</li> <li>1 bonding kit</li> <li>1 interior adjusting kit</li> <li>2 Al non-insulated ground bar</li> <li>2 Cu non-insulated ground bar</li> <li>2 Insulated Al ground bar</li> <li>2 Insulated Cu ground bar</li> <li>1 numbering strip label</li> <li>1 directory card</li> <li>1 plastic directory pouch</li> <li>1 panelboard instruction book</li> </ul>

# Panelboards

## Type P1 Panelboard Factory Assembled / Modifications and Additions

*Selection*

### Enclosure Modifications

Description
Type 1 with gasket Type 1 with dripshield Type 3R - Waterproof and silicone free Type 3R/12 - Dustproof Type 4/4X - Standard type 304 Stainless Steel Type 4/4X - Type 316 Stainless Wider enclosure - 24" wide
Hinged trim Piano hinged trim Trim with padlock Door-in-door trim Screw to the box trim Trim with gasketed door Stainless steel trim
Mounted devices <ul style="list-style-type: none"> <li>Pilot lights</li> <li>Toggle switches</li> <li>Push buttons</li> </ul> (Devices mounted into a 10" minimum box extension)
Painted boxes Custom colours

### Panel Skirts

See page 6-47

### Panel Modifications

#### Service Entrance Label

Type P1 Panelboards are factory labeled "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT" when identified as "Service Entrance" at the time of order entry. For regulations governing this feature, please consult CEC, CSA or local electrical authorities.

#### Bus Material

Represented by "A", "C" or "E" in the 11th digit of the catalogue number

Standard bussing is tin plated Al, alternate bus bar material can be selected:

- Tin plated copper
- Silver plated copper - optional

#### Branch and Main Breaker and Accessories

See section 5

- Handle blocks
- Handle locks

### Panel Modifications (cont.)

#### Grounding of Panelboards

Ground Bars are shipped with the panel interior factory mounted.

- Non-Insulated Equipment Ground Bar
- Copper Non-Insulated Ground Bar
- Al Insulated Equipment Ground Bar
- Cu Insulated Equipment Ground Bar

#### Shunt Trip on Main or Branch

BL, BLH, HBL, BQD, BQD6 as branch only. BL, BLH, HBL, ED4, ED6, HED4, uses 1" unit space for shunt trip as a branch device. All others may be used on mains or subfeeds.

#### Surge Protective Devices see section 6

- TPS3 01
  - Bus connected
  - Internally mounted (30A breaker required to feed SPD)
  - Externally mounted in a 15" high aux. enclosure (30A breaker required to feed SPD)
- TPS3 09
  - Internally mounted (20A breaker required to feed SPD)
  - Externally mounted (20A breaker required to feed SPD)
- TPS3 12
  - Externally mounted (40A breaker required to feed SPD)

#### Feed-Thru Lugs

Cannot be used in conjunction with SPD or subfeed breakers

Ampere Rating	Type	Connector Wire Range
250	Al Mechanical	(1) #6 AWG - 350 kcmil Al/Cu
	Cu Mechanical	(1) #6 AWG - 350 kcmil Cu
	Compression	(1) #6 AWG - 350 kcmil Al/Cu
400	Al Mechanical	(2) #3/0 AWG - 250 kcmil Al/Cu or
		(1) #3/0 AWG - 600 kcmil Al/Cu

#### Compression Lugs

Style	Amp Rating	Breaker Type	Compression Connector Wire Range	Box Height Addition
MLO	125	N/A	(1) #4 AWG - 350 kcmil Al/Cu	None
	250			
	400	N/A	(1) 250 - 600 kcmil or (2) #3/0 AWG - 250 kcmil	None
Main Breaker	125	ED4, ED6, HED4	(1) #12 - 1/0 AWG Al/Cu	Box must go to 24" wide
	250	FXD6, HFD6	(1) #6 AWG - 350 kcmil Al/Cu	Box must go to 24" wide

**Note:** Standard compression lugs used for P1 are range taking lugs and may require a particular crimping tool to accommodate the range. Consult factory for information.

# Panelboards

## Panelboard Replacement, Modification, and Additions

*Selection*

S1/S2 Panels—All the P1 panel kits for 250 amp and below panels will work for 250 amp maximum S1/S2 panels.

### 400/600 Amp S1/S2

#### Lug Kits — Main or Feed-Thru

Ampere Rating	Material	Wire Range	Service	Catalogue Number
125A/250A	Al/Cu	(2) 1/0–250 kcmil	1-Phase	<b>MLKA1</b>
125A/250A	Al/Cu	(2) 1/0–250 kcmil	3-Phase	<b>MLKA3</b>
400A/600A	Al/Cu	(2) #4–250 kcmil or (1) 3/0–500 kcmil	1-Phase	<b>SMLKA1</b>
400A/600A	Al/Cu	(2) #4–250 kcmil or (1) 3/0–500 kcmil	3-Phase	<b>SMLKA3</b>

#### Breaker Mounting Kits

Ampere Rating	Breaker Types	Service	Catalogue Number
125A	ED2, ED4, ED6, HED4, HED6, HHED6	1-Phase	<b>SMBKED1</b>
225A	ED2, ED4, ED6, HED4, HED6, HHED6	3-Phase	<b>SMBKED3</b>
225A	QJ2, HQJ2, HQJ2H <sup>Ⓞ</sup>	1-Phase	<b>SMBKQJ1</b>
225A	QJ2, HQJ2, HQJ2H <sup>Ⓞ</sup>	3-Phase	<b>SMBKQJ3</b>
250A	FXD6, FD6, HFXD6, HFD6	1-Phase	<b>SMBKFD1</b>
250A	FXD6, FD6, HFXD6, HFD6	3-Phase	<b>SMBKFD3</b>
400A	JD6, JXD6, HJD6, HJXD6	1-Phase	<b>SMBKJD1</b>
400A	JD6, JXD6, HJD6, HJXD6	3-Phase	<b>SMBKJD3</b>
600A	LD6, LXD6, HLD6, HLXD6	1-Phase	<b>SMBKLD1</b>
600A	LD6, LXD6, HLD6, HLXD6	3-Phase	<b>SMBKLD3</b>

#### Neutral Kits

Ampere Rating	Description	Catalogue Number
250A max.	30/42 circuit 200% neutral kit	<b>2NLK2</b>
400/600A max.	42 circuit 200% neutral kit	<b>2NLK1</b>

<sup>Ⓞ</sup> QJ mounting kit is for subfeed breakers only, not main breaker.  
The kit contains mountings for (2) breakers.

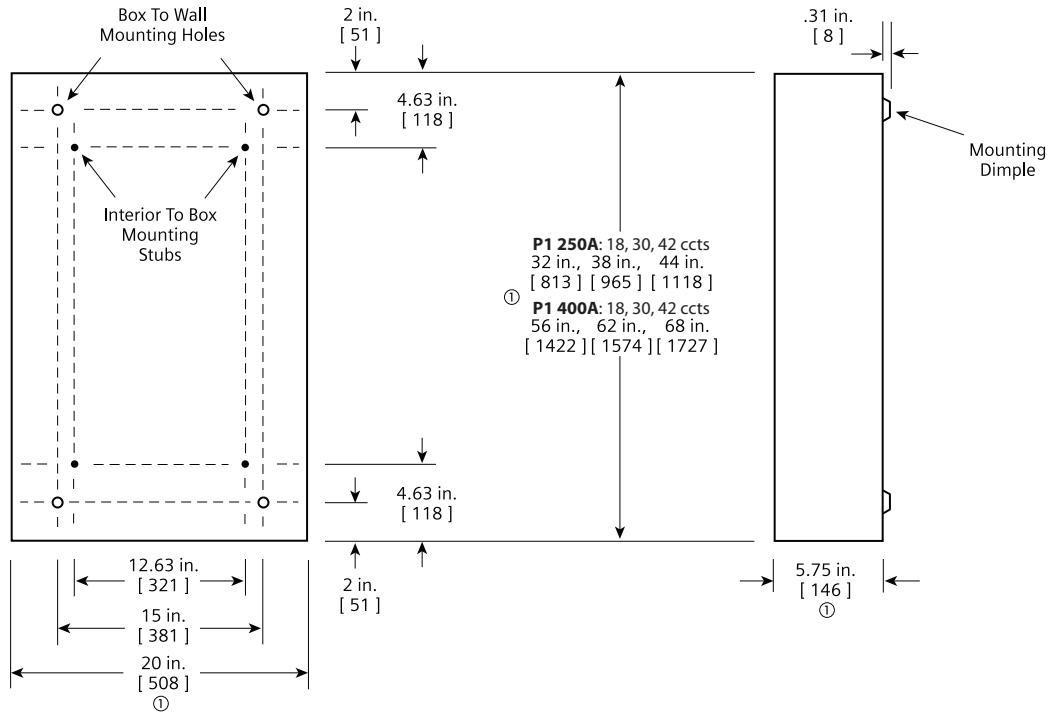
# Panelboards

## Type P1

## Dimensions

### Type 1 Box

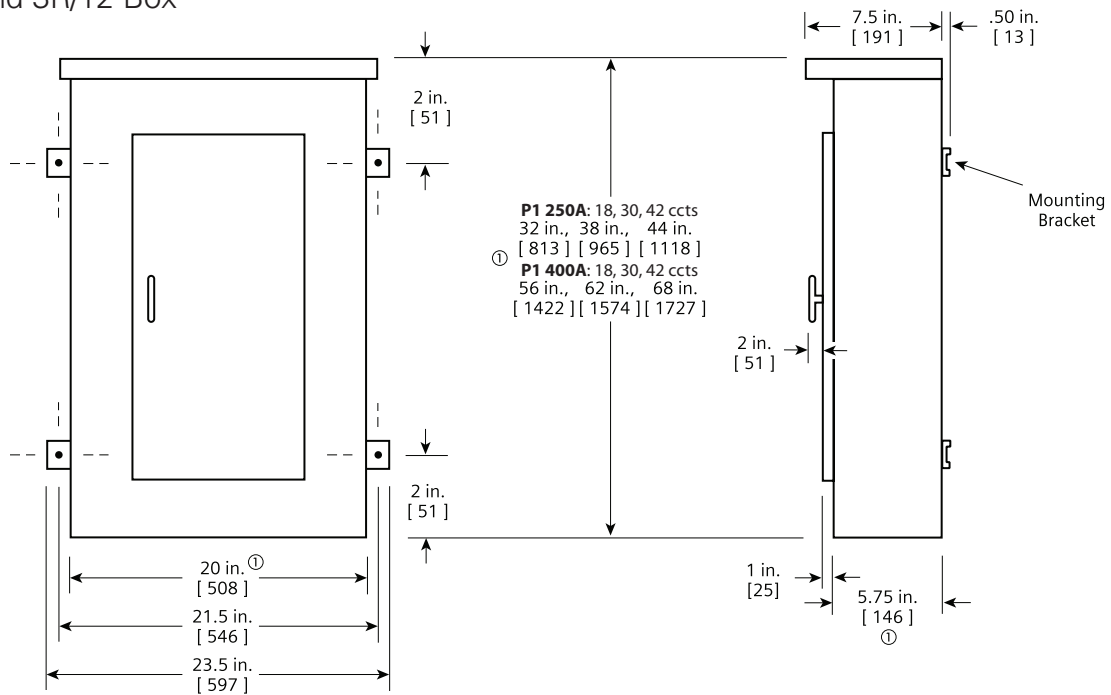
Box is symmetrical



## 6

## PANELBOARDS

### Type 3R and 3R/12 Box



①Dimensions are interior of the box. Add 5/8" [16mm] to width for absolute dimension. Add 1/8" [3mm] to height for absolute dimension.

Dimensions shown in inches and millimeters [ ].

# Panelboards

## Type P2 Panelboards

General

### Features

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. Bussing options for the P2 are aluminum and copper. Standard bussing in the P2 panel is tin-plated. Silver-plated copper is also offered as an option. Bus mounted contactors, as mains or sub mains, and subfeed lugs (up to 400 amp) are just a few of the options of this unique panel.

P2 is set up around 18, 30, 42, 54, 66, 78, 90, 102.114 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.

**Voltage** – 600V AC max.  
250V DC max.

**Amperage** – 600 amp max.

### Short circuit rating

200,000 A IR Maximum /  
100,000 A @ 600 Vac  
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 22 KAIC or the lowest rated device installed unless a series combination rating for a main or remote main is indicated. Note that the main device may be mounted remote from the panel.

### Panelboards

Certified by CSA under file #165172  
Listed by Underwriters' Laboratories Inc., under "Panelboards" File #E2269 for the interiors and #E4016 for boxes and fronts.

**Bussing** – The P2 panel has more options to meet market requirements. The standard bussing is tin-plated aluminum for amperage up to 400A and is tin-plated copper for 600A. The rating is per the requirements of CSA 22.2 No.29 – the standard for panelboards. The copper bus option for this panel is tin-plated or silver flash.

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

### Panelboards Fronts and Doors

Standard panelboards are furnished with trim featuring concealed fasteners and hinges with flush door lock. All are factory assembled for ease of installation. Trims are fabricated from code gauge steel and finished ANSI-61 grey paint. See page 6-6 for optional fronts.

### Main Breakers

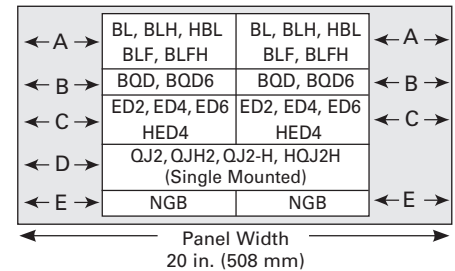
BL, BLH, HBL, BQD, BQD6, ED2, ED4, ED6, HED4, CED6, NGB, QJ2, QJH2, QJ2-H, FXD6, FD6, HFD6, CFD6, JXD6, JD6, HJD6, SHJD6, CJD6, SCJD6, LXD6, LD6, HLD6, SLD6, SHLD6, CLD6, SCLD6.

### Branch Breaker

#### Side Gutter Wiring Space - Inches (mm)

Reference Letter	Panel Width 20" (508)
A	5.750 (146)
B	5.125 (130)
C	4.000 (102)
D <sup>®</sup>	5.000 (127)
E	4.625 (117)

### Branch Breaker Side Gutters



### Weight – Approximate

Total panelboard weight when filled with a normal quantity of breakers and accessories is:

- About 3 lbs. (1kg) per inch  
(54g) per mm of box height

### Gauge Steel Boxes

Width - in (mm)	Height - in (mm)	Gauge Steel
20 (508)	26-74 (660-1880)	#14

### Gauge Steel Trims - Surface, Flush

20 (508)	26-74 (660-1880)	#14
----------	------------------	-----

### Series Connected Short Circuit Ratings

The term "Series Connected Short Circuit Rating" refers to the application of series connected circuit breakers in a combination that allows some breakers to have lower individual interrupting ratings than the available fault current. This is permitted as long as the series combination has been tested and certified by CSA. Series ratings must be specified on order at time of entry.

See Circuit Breaker Section of this book for combinations available.

# Panelboards

## Type P2 Panelboards

*Selection/Dimensions*

### P2 Box Size Requirements

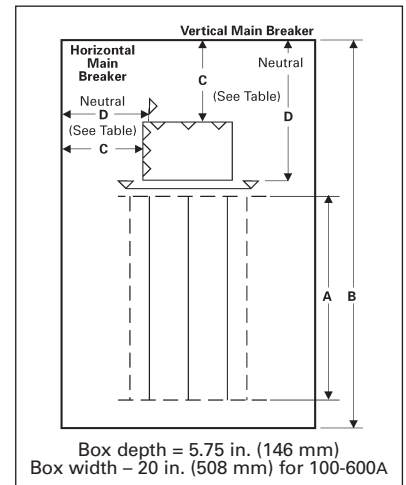
Base Box Size Requirements for P2 Panels with Standard Line Lugs are for 1" module (BL, BQD, ED, NGB) branch breakers and provisions. Unit Spaces range from 9" to 57" (in 6" increments). Boxes range from 26" to 74" high (in 6" increments). Inclusion of optional modifications may require size increases that must be added to these base values to calculate the final box size for the panel (see pages 6-29, 6-30). For service entrance application, breaker is vertically mounted only.

Box Height - Inches (mm) "B" dimension	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, NGB, ED	125A Vert. ED <sup>①</sup>	125A Horiz. CED	225A Horiz. QJ	225A Vert. QJ <sup>①</sup>	250A Horiz. FD	250A Vert. FD <sup>①</sup>	250A CFD	400A JD	400A CJD	600A LD	600A CLD
26 (660)	9	—	—	9	—	—	—	—	—	—	—	—	—	—	—
32 (813)	15	9	—	15	9	9	9	—	—	—	—	—	—	—	—
38 (965)	21	15	9	21	15	15	15	9	9	—	—	—	—	—	—
44 (1118)	27	21	15	27	21	21	21	15	15	9	—	—	—	—	—
50 (1270)	33	27	21	33	27	27	27	21	21	15	9	9	—	—	—
56 (1422)	39	33	27	39	33	33	33	27	27	21	15	15	—	9	—
62 (1575)	45	39	33	45	39	39	39	33	33	27	21	21	9	15	9
68 (1727)	51	45	39	51	45	45	45	39	39	33	27	27	15	21	15
74 (1880)	57	51	45	57	51	51	51	45	45	39	33	33	21	27	21

### Main Breaker Wire Bending Space - Inches (mm)

Panel Amps	Breaker Frames	Side Gutter	Neutral Location
		C <sup>②</sup>	D <sup>②</sup>
100	BL	5.75 (146)	8.00 (203)
	BQD	5.13 (130)	8.00 (203)
125	NGB	4.63 (118)	8.00 (203)
	ED (horiz.)	4.00 (102)	8.00 (203)
	ED (vert.)	6.56 (167)	11.13 (283)
225	QJ (horiz.)	5.00 (127)	7.00 (178)
	QJ (vert.)	10.06 (256)	16.69 (423)
250	FD (horiz.)	5.00 (127)	7.00 (178)
	FD (vert.)	13.25 (337)	22.72 (577)
400	JD	15.38 (391)	25.00 (635)
600	LD	15.38 (391)	23.00 (584)

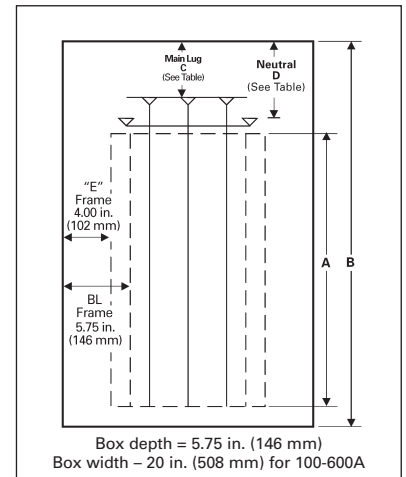
### Main breaker wire bending space diagram



### Main Lug Connectors

Panel Amps	Std Connectors for Al interior	Std Connectors for Cu interior	Side Gutter	Neutral Location
			C <sup>②</sup>	D <sup>②</sup>
125	(1) #6 - 2/0 AWG Al/Cu	(1) #6 AWG - 350 kcmil Cu	6.62 (168)	8.19 (208)
250	(1) #6 - 350 kcmil Al/Cu	(1) #6 AWG - 350 kcmil Cu	11.75 (298)	10.72 (273)
400	(1) #2 AWG - 600 kcmil Al/Cu or (1) 1/0 AWG - 250 kcmil Al/Cu	(1) 1/0 AWG - 600 kcmil Cu or (2) 1/0 - 4/0 AWG Cu	14.00 (356)	13.09 (333)
600	(2) #2 AWG - 600 kcmil Al/Cu	(2) #2 AWG - 600 kcmil Cu	14.00 (356)	11.00 (279)

### Main lug wire bending space diagram



① Vertical main breaker application for ED, QJ and FD adds 6" (152mm) of box height.

② Refer to wire bending space diagrams.

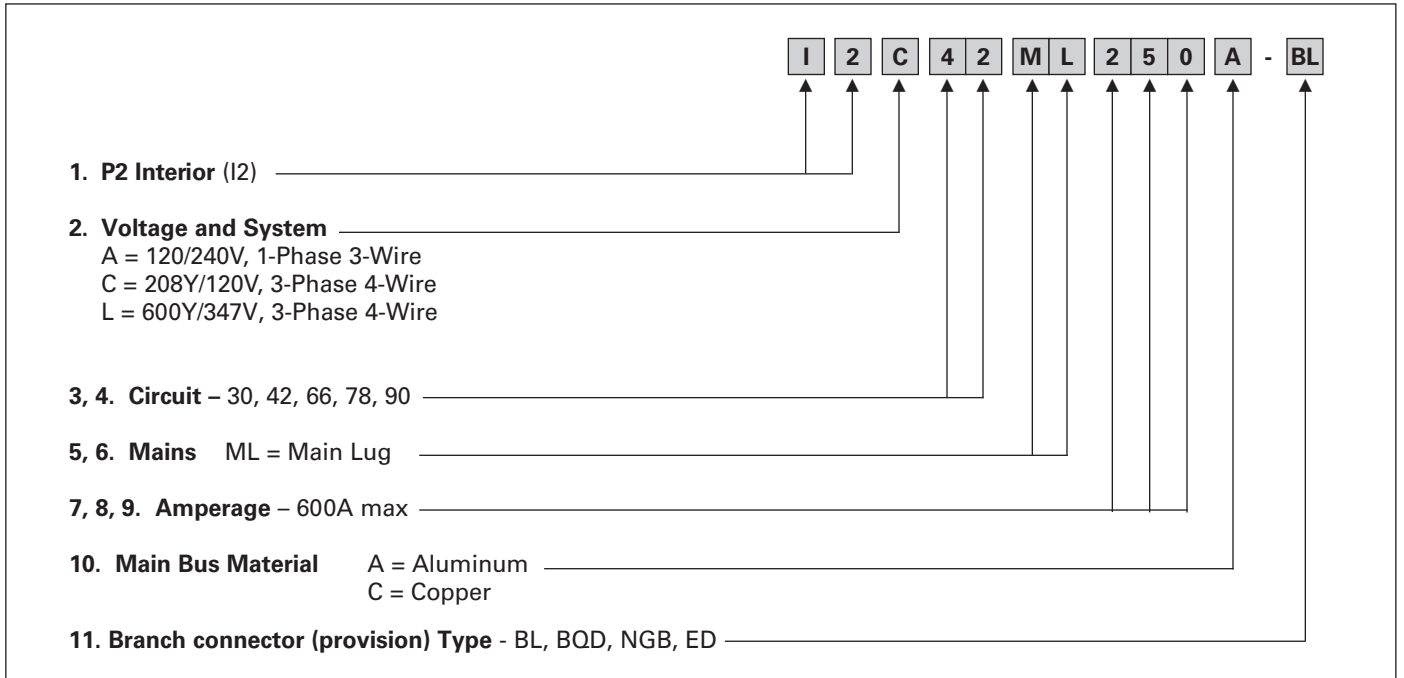
# Panelboards

## Distributor Stock - Type P2 Main Lug Only

Reference

### Interior Numbering System

Type P2 unassembled panelboards are available as main lug only and come with provisions for the branch breaker type selected.



### Branch Breakers

Panel Type	Voltage (Max.)	Breaker Type	Power Product Catalogue Page
P2	240	BL, BLH, HBL, BQD, BQD6	See section 5
	600/347	BQD, BQD6	

# Panelboards

## Distributor Stock - Type P2 Main Lug Only

*Selection*

Interior, Box and Trim Selection

**600A Max. — 20" Wide x 5.75" Deep**

1. Determine voltage, system, amperage and type of branch breaker connectors to select the appropriate Interior from the table below.
2. Select the type of box and trim needed.
3. List required branch circuit breakers: Type BL, BQD, NGB or ED breakers.

### Type P2 Unassembled Panelboards

Interiors Only - Less Branch Breakers				Boxes			Trim	
Amperes Rating Mains	Max. No. of Circuits	Provision Type	Main Lug + provisions	Height - Inches (mm)	Type 1	Type 3R/12 <sup>ⓐ</sup>	Surface	Flush <sup>ⓑ</sup>

#### 1-Phase, 3-Wire

120 / 240V

250	66	BL	I2A66ML250A-BL	56 (1422)	B56	WP56	S56B	F56B
	78		I2A78ML250A-BL	62 (1575)	B62	WP62	S62B	F62B
400	42	BL	I2A42ML400A-BL	50 (1270)	B50	WP50	S50B	F50B
	66		I2A66ML400A-BL	62 (1575)	B62	WP62	S62B	F62B

#### 3-Phase, 4-Wire

208Y / 120V

250	42	BL	I2C42ML250A-BL	44 (1118)	B44	WP44	S44B	F44B
	66		I2C66ML250A-BL	56 (1422)	B56	WP56	S56B	F56B
	78		I2C78ML250A-BL	62 (1575)	B62	WP62	S62B	F62B
400	42	BL	I2C42ML400A-BL	50 (1270)	B50	WP50	S50B	F50B
	66		I2C66ML400A-BL	62 (1575)	B62	WP62	S62B	F62B
	78		I2C78ML400A-BL	68 (1727)	B68	WP68	S68B	F68B
	90		I2C90ML400A-BL	74 (1880)	B74	WP74	S74B	F74B
600	66	BL	I2C66ML600A-BL	62 (1575)	B62	WP62	S62B	F62B
			I2C66ML600A-BQD	62 (1575)	B62	WP62	S62B	F62B

#### 3-Phase, 4-Wire

600Y / 347V

250	30	ED	I2L30ML250A-ED	38 (965)	B38	WP38	S38B	F38B
	42	ED	I2L42ML250A-ED	44 (1118)	B44	WP44	S44B	F44B
		NGB	I2L42ML250A-NGB	44 (1118)	B44	WP44	S44B	F44B
	66	BQD	I2L66ML250A-BQD	56 (1422)	B56	WP56	S56B	F56B
ED NGB		I2L66ML250A-ED I2L66ML250A-NGB	56 (1422) 56 (1422)	B56 B56	WP56 WP56	S56B S56B	F56B F56B	
78	BQD	I2L78ML250A-BQD	62 (1575)	B62	WP62	S62B	F62B	
	ED	I2L78ML250A-ED	62 (1575)	B62	WP62	S62B	F62B	
400	42	BQD	I2L42ML400A-BQD	50 (1270)	B50	WP50	S50B	F50B
		ED	I2L42ML400A-ED	50 (1270)	B50	WP50	S50B	F50B
		NGB	I2L42ML400A-NGB	50 (1270)	B50	WP50	S50B	F50B
	66	BQD	I2L66ML400A-BQD	62 (1575)	B62	WP62	S62B	F62B
ED NGB		I2L66ML400A-ED I2L66ML400A-NGB	62 (1575) 62 (1575)	B62 B62	WP62 WP62	S62B S62B	F62B F62B	
78	BQD	I2L78ML400A-BQD	68 (1727)	B68	WP68	S68B	F68B	
	ED	I2L78ML400A-ED	68 (1727)	B68	WP68	S68B	F68B	
90	BQD	I2L90ML400A-BQD	74 (1880)	B74	WP74	S74B	F74B	
	ED	I2L90ML400A-ED	74 (1880)	B74	WP74	S74B	F74B	
600	66	BQD	I2L66ML600A-BQD	62 (1575)	B62	WP62	S62B	F62B
		ED	I2L66ML600A-ED	62 (1575)	B62	WP62	S62B	F62B
		NGB	I2L66ML600A-NGB	62 (1575)	B62	WP62	S62B	F62B

ⓐ Hinged door included with type 3R/12 enclosures.

ⓑ Flush trims extend 3/4" beyond each side of the base box dimensions.



# Panelboards

## Circuit Breaker/Lighting and Distribution

Selection

### Type P2 Panelboards

#### Main Breaker Selection<sup>①</sup>

Ampere Rating	Breaker Type	Maximum Interrupting Rating (kA)			Ref. Catalogue Number	Available Trip Values	
		240V AC	480V AC	600V AC			
70	BQD6	65	—	10	B6	15, 20, 25, 30, 35, 40, 45, 50, 60, 70	
100	BL	10	—	—	BL	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	BLH	22	—	—	BH	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	HBL	65	—	—	HB	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	BQD	65	14	—	BQ	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	ED2	10	—	—	E2	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
125	NGB	100	25	—	NB	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125	
	ED4	65	18	—	E4	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125	
	ED6	65	25	18	E6	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125	
	HED4	100	42	—	H4	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125	
	CED6 <sup>②</sup>	200	200	100	CE	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 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	
	FD6	65	35	22	FD	70, 80, 90, 100, 110, 125, 150, 175, 200, 225	
	FXD6	65	35	22	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 <sup>②</sup>	200	200	100	CF	70, 80, 90, 100, 110, 125, 150, 175, 200, 225	
	250	FD6	65	35	22	FD	250
		FXD6	65	35	22	FX	250
HFD6		100	65	25	HF	250	
HFXD6		100	65	25	H2	250	
CFD6 <sup>②</sup>		200	200	100	CF	250	
400	JXD6 <sup>②</sup>	65	35	25	JX	200, 225, 250, 300, 350, 400	
	JD6 <sup>②</sup>	65	35	35	J6	200, 225, 250, 300, 350, 400	
	HJD6 <sup>②</sup>	100	65	35	H6	200, 225, 250, 300, 350, 400	
	SJD6 <sup>②</sup>	65	35	25	SJ	200, 300, 400	
	SHJD6 <sup>②</sup>	100	65	35	SX	200, 300, 400	
	CJD6 <sup>②</sup>	200	150	100	CJ	200, 225, 250, 300, 350, 400	
	SCJD6 <sup>②</sup>	200	150	100	SC	200, 300, 400	
600	LXD6 <sup>②</sup>	65	35	25	LX	450, 500, 600	
	LD6 <sup>②</sup>	65	35	25	L6	250, 300, 350, 400, 450, 500, 600	
	HLD6 <sup>②</sup>	100	65	35	HL	250, 300, 350, 400, 450, 500, 600	
	SLD6 <sup>②</sup>	65	35	25	SL	300, 400, 500, 600	
	SHLD6 <sup>②</sup>	100	65	35	S2	300, 400, 500, 600	
	CLD6 <sup>②</sup>	200	150	100	CL	450, 500, 600	
	SCLD6	200	150	100	S1	300, 400, 500, 600	

#### 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		
			240 Vac	480 Vac	600 Vac
FD6 <sup>③</sup> , FXD6	Twin	70–250	65	35	22
HFD6 <sup>③</sup> , HFXD6	Twin	70–250	100	65	25

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

② Vertically mounted.

③ Twin mounted subfeed breakers are mounted at the bottom of panelboard only and adds 24" to the panel height.

**Note:** For detailed circuit breaker information, consult section 5.

# Panelboards

## Circuit Breaker/Lighting and Distribution

Selection

### Type P2 Panelboards

#### Branch Circuit Breakers

Max. Amp Rating	Breaker Type	Number of Poles	Maximum Interrupting Rating (kA)							Available Trip Values
			120V AC	120/240V AC	240V AC	277V AC	480/277V AC	347V AC	600Y/347V AC	
70	BOD6	1	65	—	—	—	—	—	10	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
		2	—	65	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
		3	—	—	65	—	—	—	10	15, 20, 25, 30, 35, 40, 45, 50, 60, 70
100	BL	1	10	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70
		2	—	10	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
		3	—	—	10	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	BLH	1	22	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70
		2	—	22	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
		3	—	—	22	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	HBL	1	65	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70
		2	—	65	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100
		3	—	—	65	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100
	BLR	2	—	—	10	—	—	—	—	15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	BLF	1	10	—	—	—	—	—	—	15, 20, 25, 30
		2	—	10	—	—	—	—	—	15, 20, 30, 40, 50, 60
	BLHF	1	22	—	—	—	—	—	—	15, 20, 25, 30
		2	—	22	—	—	—	—	—	15, 20, 30, 40, 50, 60
	BLE	1	10	—	—	—	—	—	—	15, 20, 30
		2	—	10	—	—	—	—	—	15, 20, 30, 40, 50, 60
	BLEH	1	22	—	—	—	—	—	—	15, 20, 30
		2	—	22	—	—	—	—	—	15, 20, 30, 40, 50, 60
BAF	1	10	—	—	—	—	—	—	15, 20	
BAFH	1	22	—	—	—	—	—	—	15, 20	
BQD	1	65	—	—	—	14	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	2	—	—	65	—	—	14	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	3	—	—	65	—	—	14	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
ED2	1	10	—	—	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	2	—	—	10	—	—	—	—	20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
	3	—	—	10	—	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	
125	NGB	1	100	—	—	25	—	14	—	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
		2	—	—	100	—	25	—	14	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
		3	—	—	100	—	25	—	14	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
	ED4	1	65	—	—	22	—	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
		2	—	—	65	—	18	—	—	20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
		3	—	—	65	—	18	—	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
	ED6	1	—	—	—	25	—	18 <sup>②</sup>	—	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
		2	—	—	65	—	25	—	18	20, 25, 30, 35, 40, 45, 50
		3	—	—	65	—	25	—	18	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
	HED4	1	100	—	—	25 <sup>①</sup>	—	—	—	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
		2	—	—	100	—	42	—	—	20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
		3	—	—	100	—	42	—	—	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125
CED6 <sup>③</sup>	2	—	—	200	—	200	—	100	20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 125	
	3	—	—	200	—	200	—	100	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 125	
225	QJ2	2	—	—	10	—	—	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
		3	—	—	10	—	—	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
		3	—	—	22	—	—	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
	QJ2H	2	—	—	42	—	—	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
		3	—	—	42	—	—	—	—	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
	HQJ2H	3	—	—	100	—	—	—	—	100, 110, 125, 150, 175, 200, 225

#### Neutral Connections

Amps	Main Neutral Lugs - Wire Size range
125A	(1) #6 - 2/0 AWG Al/Cu
250A	(1) #6 - 350 MCM AWG Al/Cu
400A	(1) #2 - 600 MCM Al/Cu and (1) #6 - 350 MCM Al/Cu
600A	(2) #2 - 600 MCM Al/Cu and (1) #6 - 350 MCM Al/Cu

Branch Neutral connections	Material	Wire Size range per neutral rack
Standard MB	Al	(18) #14 - #6 AWG Al/Cu and (3) 1/0 - #6 AWG Al/Cu
Standard MLO	Al	(36) #14 - #4 Al/Cu and (6) 3/0 - #6 Al/Cu
Optional	Al / Cu	(18) #6 - #14 AWG Al/Cu and (3) 1/0 - #14 AWG Al/Cu

- ① 1-Pole HED4 15-30A rated 65kA  
35-100A rated 25kA
- ② 1-Pole ED6 15-30A rated 30kA @ 347V  
35-100A rated 18kA @ 347V
- ③ CED6 breaker can be used in 400A panel with copper bussing only.  
Panel enclosure required is 24" (610mm) wide.

**NOTE:** QJ Breakers are single mounted in unit space and take 6" of unit space. Limited to (4) per panel max. BL, HBL, BLH and BOD 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.

# Panelboards

## Type P2 Panelboard Kit and Accessories

*Selection*

### Branch Breaker Connector Kits

Kit Number	Description	Contents
BBKB32 BBKB32AT BBKB32CS	BL/BQD 6-pole 3" branch breaker kit Cu/Tin BL/BQD 6-pole 3" branch breaker kit Al/Tin BL/BQD 6-pole 3" branch breaker kit Cu/Silver	Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware
BBKCED32 BBKCED32CS	CED branch breaker kit Cu/Tin CED branch breaker kit Cu/Silver	Kit contains connector kit for P2 400A, 24" wide only
BBKED32 BBKED32AT BBKED32CS	ED 6-pole 3" branch breaker kit Cu/Tin ED 6-pole 3" branch breaker kit Al/Tin ED 6-pole 3" branch breaker kit Cu/Silver	Kit contains breaker support, inter-phase barrier, (3) A/C connectors, (1) B connector, hardware
BBKNB32 BBKNB32AT BBKNB32CS	NGB 6-pole 3" branch breaker kit Cu/Tin NGB 6-pole 3" branch breaker kit Al/Tin NGB 6-pole 3" branch breaker kit Cu/Silver	Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware
BBKQ1 BBKQ1AT BBKQ1CS	QJ 6-pole branch breaker kit Cu/Tin QJ 6-pole branch breaker kit Al/Tin QJ 6-pole branch breaker kit Cu/Silver	Kit contains all connectors and cover plates necessary to mount both 2 and 3-pole breakers

### Type P2 Miscellaneous Parts and Accessories

Catalogue Number	Description
12-1110-01	1 Directory card for 1-42 circuits
11-1824-01	1 Plastic directory card holder
MCHK	1 Metallic directory card holder
FPLK2	2 Fas-latch trim locks with 2 keys
DFK1	BL, BQD, ED deadfront kit for 1" (include 7 different length centre strips)
DFFP3	1 Filler plate 3"
EGK	1 Aluminum non-insulated ground bar
ECGK	1 Copper non-insulated ground bar
EWK1	1 End walls with knockouts (20"W x 5.75"D)
IGK	1 Insulated Al ground bar
ICGK	1 Insulated Cu ground bar
IMK1	1 Interior adjusting kit
JCK24	24 Trim screws and 24 trim clips
NBK03	1 Number Strip 1-42
NBK04	1 Number Strip 43-84
NBK05	1 Number Strip 85-126
NBK3	1 Numbering Button Kit 1@42
NBK4	1 Numbering Button Kit 43@84
NBK5	1 Numbering Button Kit 85@126
QF3-UL	1 Filler Plate 1"
P2BK1	1 P2 250A Max. Bonding Kit
P2BK2	1 P2 400A Max. Bonding Kit
P2BK3	1 P2 600A Max. Bonding Kit
SDKN	1 Dripshield 20"W x 5.75"D

### Type P2 Spare Part Kit

Catalogue Number	Description
MHKP2	<ul style="list-style-type: none"> <li>▪ 8 trim screws</li> <li>▪ 8 trim clips</li> <li>▪ 1 bonding kit 600A max.</li> <li>▪ 1 int. adjusting kit</li> <li>▪ 2 Al non-insulated ground bar</li> <li>▪ 2 Cu non-insulated ground bar</li> <li>▪ 2 Insulated Al ground bar</li> <li>▪ 2 Insulated Cu ground bar</li> <li>▪ 1 Directory card 1-42 ccts</li> <li>▪ 1 Directory card 43-84 ccts</li> <li>▪ 1 numbering button kit 1-42 ccts</li> <li>▪ 1 numbering button kit 43-84 ccts</li> <li>▪ 1 Panelboard instruction book</li> <li>▪ 2 plastic directory pouch</li> </ul>

# Panelboards

## Type P2 Panelboard Factory Assembled/Modifications and Additions

*Selection*

### Enclosure Modifications

Description
Type 1 with gasket Type 1 with dripshield Type 3R - Waterproof and silicone free Type 3R/12 - Dustproof Type 4/4X - Standard type 304 Stainless Steel Type 4/4X - Type 316 Stainless Steel Wider enclosure - 24" wide
Hinged trim Piano hinged trim Trim with padlock Door-in-door trim Screw to the box trim Trim with gasketed door Stainless steel trim
Mounted devices <ul style="list-style-type: none"> <li>Pilot lights</li> <li>Toggle switches</li> <li>Push buttons</li> </ul> (Devices mounted into a 10" minimum box extension).
Painted boxes Custom colours

### Panel Skirts

See page 6-47

### Panel Modifications

#### Service Entrance Label

Type P2 Panelboards are factory labeled "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT" when identified as "Service Entrance" at the time of order entry. For regulations governing this feature, please consult CEC, CSA or local electrical authorities.

#### Bus Material

Represented by "A", "C" or "E" in the 11th digit of the catalogue number

Standard bussing is tin plated Al, alternate bus bar material can be selected:

- Tin plated copper
- Silver plated copper - optional

#### Branch and Main Breaker Accessories

- See section 5.
- Handle blocks
  - Handle locks
  - Aux. Contacts<sup>Ⓞ</sup>
  - UVR<sup>Ⓞ</sup>

### Panel Modifications (cont.)

#### Subfeed (Double) Lugs— For Main Lug Panelboards Only

Ampere Rating	Type	Connector Wire Range
125	Al Mechanical	(2) #14 AWG - 2/0 AWG Al/Cu
250	Al Mechanical	(2) #6 AWG - 350 kcmil Al/Cu
400	Al Mechanical	(2) #2 AWG - 600 kcmil Al/Cu

**Note:** Ref. p.6-29 for box size additions (inches) for optional features

#### Feed-Thru Lugs — Cannot be used in conjunction with SPD or Subfeed Breakers (200% Neutral not available)

Amp Rating	Type	Connector Wire Range
125	Al Mechanical	(1) #6 AWG - 2/0 AWG Al/Cu
	Cu Mechanical	(1) #6 AWG - 350 kcmil Cu
	Compression	(1) #6 AWG - 350 kcmil Al/Cu
250	Al Mechanical	(1) #6 AWG - 350 kcmil Al/Cu
	Cu Mechanical	(1) #6 AWG - 350 kcmil Cu
	Compression	(1) #6 AWG - 350 kcmil Al/Cu
400	Al Mechanical	(1) #2 AWG - 600 kcmil Al/Cu and (1) 1/0 AWG - 250 kcmil Al/Cu
	Cu Mechanical	(1) 1/0 AWG - 600 kcmil or (2) 1/0 AWG - 4/0 AWG
	Compression	(1) 250 kcmil - 600 kcmil Cu or (2) #6 AWG - 350 kcmil Al/Cu
600	Al Mechanical	(2) #2 AWG - 600 kcmil Al/Cu
	Cu Mechanical	(2) #2 AWG - 600 kcmil Cu
	Compression	(2) #6 AWG - 350 kcmil Al/Cu (2) 400 kcmil - 600 kcmil Al or (2) 400 kcmil - 500 kcmil Cu

**Note:** Ref. p.6-29 for box size additions (inches) for optional features

### Contactors

- Asco 920 through 225 amps - installed in an 24" auxiliary box
- Siemens LEN through 200A - installed in auxiliary box:  
LEN 30A-60A = Min. 5¼"D x 20"W x 10"H  
LEN 100A = Min. 5¼"D x 20"W x 18"H  
LEN 200A = Min. 7¼"D x 20"W x 24"H

### Increase Capacity Neutral up to 200% (N/A on FeedThru Lugs & Subfeed Lugs)

Main Bus Amps
125
250
400
600

See page 6-29 for unit space adders and compatibility with other options.

### Grounding of Panelboards

Ground Bars are shipped with the panel interior factory mounted.

- Non-Insulated Equipment Ground Bar
- Copper Non-Insulated Ground Bar
- Al Insulated Equipment Ground Bar
- Cu Insulated Equipment Ground Bar

### Shunt Trip on Main or Branch

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

### Surge Protective Device see section 9

- TPS3 01
  - Bus connected
  - Internally mounted (30A breaker required to feed SPD)
  - Externally mounted in a 15" high aux. enclosure (30A breaker required to feed SPD)
- TPS3 09
  - Internally mounted (20A breaker required to feed SPD)
  - Externally mounted (20A breaker required to feed SPD)
- TPS3 12
  - Externally mounted (40A breaker required to feed SPD)

<sup>Ⓞ</sup> Accessories on 1" pole breakers (BL, BQD, ED) will take unit space.

# Panelboards

## Type P2 Panelboard Standard Modifications and Additions

*Selection*

### Box Size Additions for Optional Features - Inches (mm)

Options	Main Lugs				Main Breakers											
	125A	250A	400A	600A	125A Horiz. BL, BQD, ED, NGB	125A Horiz. CED	125A Vert. ED	225A Horiz. QJ	225A Vert. QJ	225A Horiz. FD	250A Vert. FD	250A Vert. CFD	400A JD	400A CJD	600A LD	600A CLD
*Min. Box Size	26 (660)	32 (813)	38 (965)	38 (965)	26 (660)	32 (813)	32 (813)	32 (813)	38 (965)	38 (965)	44 (1118)	50 (1270)	50 (1270)	62 (1575)	56 (1422)	62 (1575)
200% Neutral (lug type)	0	0	6 (all) (152)	6 (all) (152)	0	0	0	N/A	0	N/A	0	0	0	0	0	0
Std. Lugs (100% Neut. PNL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CU Lugs (100% Neut. PNL)	6 (152)	6 (152)	6 (152)	0	N/A	N/A	0	N/A	0	N/A	0	0	0	0	0	0
Comp Lugs (100% Neut. PNL)	6 (152)	6 (152)	6 (152)	6 (152)	N/A	N/A	0	N/A	0	N/A	0	0	0	0	0	0
Feed-thru Standard Lugs	6 (152)	6 (152)	12 (305)	12 (305)	6 (152)	6 (152)	6 (152)	N/A	6 (152)	N/A	6 (152)	6 (152)	12 (305)	12 (305)	12 (305)	12 (305)
Feed-thru Cu Lugs	6 (152)	6 (152)	12 (305)	N/A	N/A	N/A	6 (152)	N/A	6 (152)	N/A	6 (152)	6 (152)	12 (305)	12 (305)	N/A	N/A
Feed-thru Comp Lugs	6 (152)	12 (305)	12 (305)	N/A	N/A	N/A	6 (152)	N/A	6 (152)	N/A	12 (305)	12 (305)	12 (305)	12 (305)	N/A	N/A
Subfeed Standard Lugs	0	6 (152)	6 (152)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(1) FD Subfeed (Horizontal Mtg.)	N/A	12 (305)	12 (305)	12 (305)	N/A	N/A	N/A	N/A	N/A	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)
(2) FD Subfeed (Vertical Mtg.)	N/A	24 (610)	24 (610)	24 (610)	N/A	N/A	N/A	N/A	N/A	24 (610)	24 (610)	24 (610)	24 (610)	N/A	N/A	N/A
SPD	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)

NOTE: N/A = OPTION NOT AVAILABLE

\*Min. Box Size, corresponding to 9" of Unit Space.

### Compression Lugs

Style	Amp Rating	Breaker Type	Compression Connector Wire Range	Box Height Addition - Inches (mm)
MLO	125	N/A	(1) #6 AWG - 350 kcmil Al/Cu	6 (152)
	250	N/A	(1) #6 AWG - 350 kcmil Al/Cu	6 (152)
	400	N/A	(1) 250 - 600 kcmil Cu	6 (152)
			(2) #6 AWG - 350 kcmil Al/Cu	
600	N/A	(2) #6 AWG - 350 kcmil Al/Cu	6 (152)	
		(2) 400 - 600 kcmil Al or (2) 400 - 500 kcmil Cu		
Main Breaker	100	ED2, ED4, ED6, HED4, CED6 <sup>Ⓞ</sup>	(1) 2/0 AWG Al/Cu	Box must go to 24" wide on CED6 breaker only Add 6" to box height for NØ
	250	FXD6, HFD6, CFD6	(1) 350 kcmil Al/Cu	Box must go to 24" wide for all breakers Requires an additional 6.0" box height
	400	JD6, JXD6, HJD6, CJD6, SJD6, SHJD6, SCJD6	(1) 500 kcmil Al/Cu	9 (229)
	600	LD6, LXD6, HLD6, CLD6, SLD6, SHLD6, SCLD6	(1) 500 kcmil Al/Cu	6 (152)

NOTE: Standard compression lugs used for P2 are range taking lugs and may require a particular crimping tool to accommodate the range. Consult factory for information.

### Alternate Lugs

Style	Amp Rating	Breaker Type	Alternate Connector Wire Range	Box Height Addition - Inches (mm)
MLO	400	N/A	(1) 250 - 750 kcmil Al/Cu or (2) #3/0 AWG - 250 kcmil Al/Cu	6 (152)
Main Breaker	400	JD6, JXD6, HJD6, CJD6, SJD6, SHJD6, SCJD6	(1) #4/0 AWG - 750 kcmil Al/Cu	6 (152)

Ⓞ Not available for feed thru lug.

# Panelboards

## Type P2 Panelboard Kits and Accessories

*Selection*

### Standard Enclosures

Box Height - Inches (mm)	Catalogue Number			
	Type 1 Standard			Type 3R/12 <sup>Ⓜ</sup>
	Box	Surface Trim	Flush Trim <sup>Ⓛ</sup>	
26 (660)	B26	S26B	F26B	WP26
32 (813)	B32	S32B	F32B	WP32
38 (965)	B38	S38B	F38B	WP38
44 (1118)	B44	S44B	F44B	WP44
50 (1270)	B50	S50B	F50B	WP50
56 (1422)	B56	S56B	F56B	WP56
62 (1575)	B62	S62B	F62B	WP62
68 (1727)	B68	S68B	F68B	WP68
74 (1880)	B74	S74B	F74B	WP74

### Options For Type 1 Trims

Hinged trim – Replace "B" suffix with "H"

Door-in-door – Replace "B" suffix with "D"

Screw to box – Replace "B" suffix with "C"

Trim with padlock – Add "-PL" suffix

Metal card holder – Add "M" suffix on all trims

### Option For 24" Wide Enclosures

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

<sup>Ⓛ</sup> Flush trim extend 3/4" on each side of the base box.

<sup>Ⓜ</sup> Hinged door included in type 3R/12 enclosures.

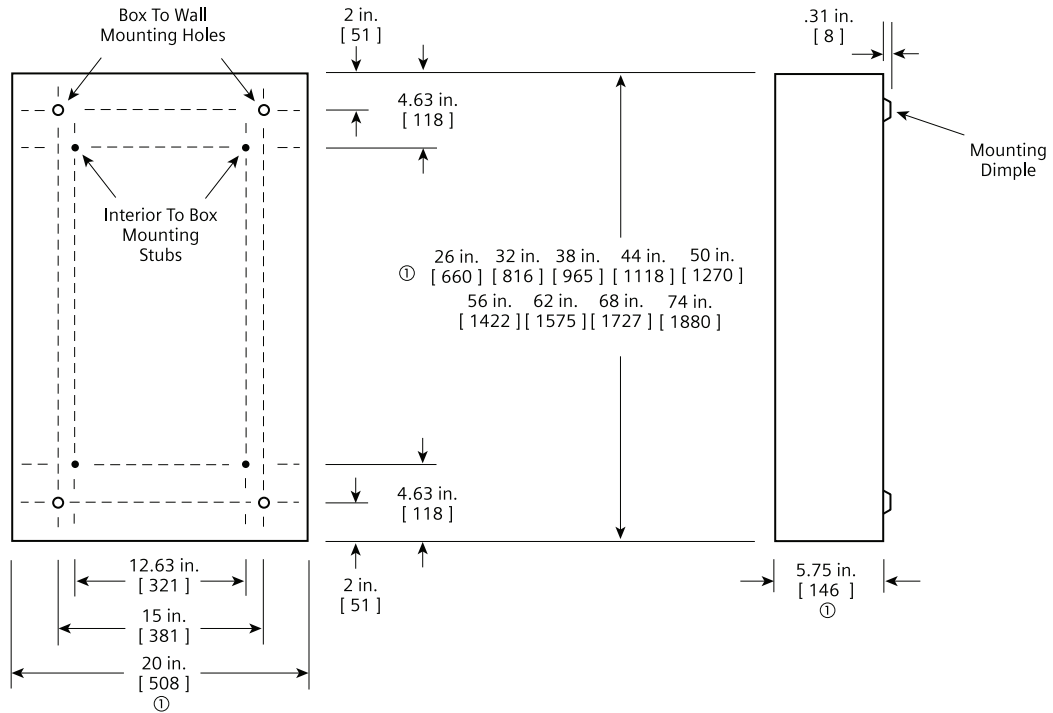
# Panelboards

## Type P2 Panelboards

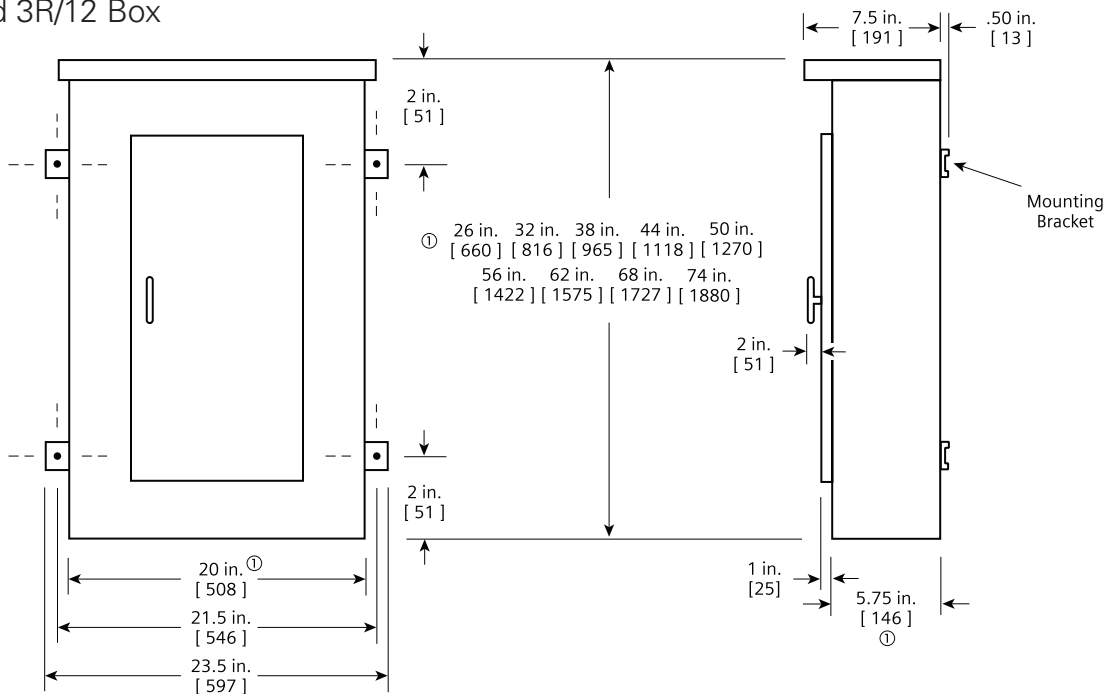
## Dimensions

### Type 1 Box

Box is symmetrical



### Type 3R and 3R/12 Box



①Dimensions are interior of the box. Add 5/8" [16mm] to width for absolute dimension. Add 1/8" [3mm] to height for absolute dimension.

Dimensions shown in inches and millimeters [ ].

# Panelboards

## Type P3 Panelboards

*General*

### Features

Another innovation from Siemens is the P3 panel. It is a smaller, footprint distribution panel to fit a number of applications. This panel offers factory-assembled options, and has the ability to mix breaker frames in unit space up to 125 amps. Bussing options for the P3 are aluminum and copper. All bussing in the P3 panel is tin-plated as a standard. Silver-plated copper is offered as an option.

The P3 panel configurations, defined by the unit space, allow for a given amperage and box height. The P3 panel starts with a 56" high box. Breaker 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.

Like other distribution panels, the P3 panel can have blank space added into the panel 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.

**Voltage** – 600V AC max.  
250V DC max.

**Amperage** – 800 amp max.

**Short circuit rating**  
200,000 A @ 480 Vac /  
100,000 A @ 600 Vac IR Maximum 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 22 KAIC or the lowest rated device installed unless a series combination rating for a remote main is indicated. Note that the main device may be mounted remote from the panel.

**Panelboards**  
cUL and UL listed, under "Panelboards" File #E2269 for the interiors and #E4016 for boxes and fronts

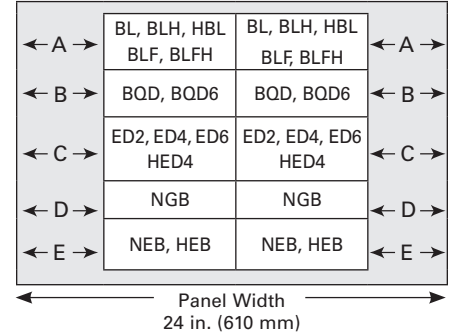
**Enclosure** – Standard Type 1 enclosure is 24" wide x 7.75" deep x Box Height is determined by main device and unit space. See charts for box height.

**Panelboards Fronts and Doors**  
Standard panelboards are furnished with trim featuring concealed fasteners and hinges with a flush door lock. All are factory assembled for ease of installation. Trims are fabricated from code gauge steel and finished ANSI-61. See page 6-6 for optional trims.

### Branch Breaker Side Gutter Wiring Space - Inches (mm)

Reference Letter	Panel Width 24" (610)
A	7.750 (197)
B	7.125 (181)
C	6.000 (152)
D	6.625 (168)
E	5.750 (144)

### Branch Breaker Wire Bending Diagram



### Weight – Approximate

Total panelboard weight when filled accessories is:  
 • About 5 lbs. (1kg) per inch of box height

### Gauge Steel of Boxes and Fronts, Surface & Flush

Dimensions - Inches (mm)		Gauge Steel	
Width	Height	Box	Front
24 (610)	56-80 (1422-2032)	#14	#14



# Panelboards

## Type P3 Panelboards

## Selection/Dimensions

### Panel Unit Space to Box Height Requirements

Box Height - Inches (mm) "B" dimension	P2 Panels, with standard Line lugs unit space (starting with 9" and adding 6" increments) - "A" dimension		
	Main Lugs		
	400A	600A	800A
56 (1425)	21	21	21
62 (1575)	27	27	27
68 (1727)	33	33	33
74 (1880)	39	39	39
80 (2032)	45	45	45

### Main Lug Wire Bending - Inches (mm)<sup>②</sup>

Panel Amps	Standard Connectors	C	D
400	(1) #2 - 600 kcmil Al/Cu and (1) 1/0 - 250 kcmil Al/cu	16.00 (406)	17.88 (454)
600	(2) #2 - 600 kcmil Al/Cu	16.00 (406)	17.88 (454)
800	(2) #2 - 600 kcmil Al/Cu	16.00 (406)	17.88 (454)

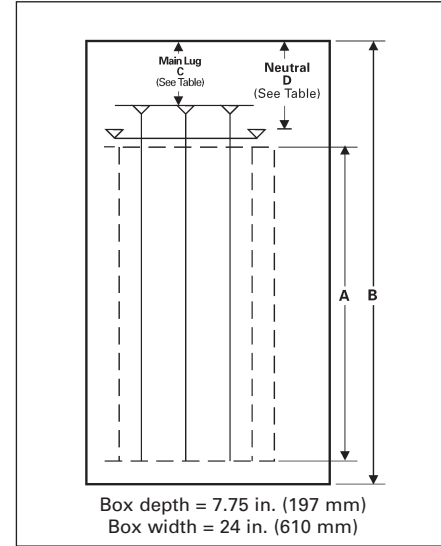
### 400A Neutral Connections

No. of circuits	Neutral Lug - Wire Size range	No. of connections per neutral bar
42 circuits	(1) #2 - 600 kcmil Al/Cu	(16) #4 - #14 AWG
54 circuits		(15) 1/0 - #14 AWG
66 circuits		(23) #4 - #14 AWG
78 circuits		(22) 1/0 - #14 AWG
90 circuits		

### 600A - 800A Neutral Connections

No. of circuits	Neutral Lug - Wire Size range	No. of connections per neutral bar
42 circuits	(2) #2 - 600 kcmil Al/Cu	(16) #4 - #14 AWG
54 circuits		(15) 1/0 - #14 AWG
66 circuits		(23) #4 - #14 AWG
78 circuits		(22) 1/0 - #14 AWG
90 circuits		

### Main Lug Wire Bending Diagram



# Panelboards

## Circuit Breaker/Lighting and Distribution

*Selection/Dimensions*

### Type P3 Panelboards

#### Branch Circuit Breakers

Max. Amp Rating	Bolt-On Breaker Type	Amps	Provisions for Maximum Interrupting Rating (kA)						
			120V AC	120/240V AC	240V AC	277V AC	480V AC	600V AC	250V DC
70	BQD6	15-70	—	65	65	—	—	10	14
100	BL	15-60	10	—	—	—	—	—	—
		70	—	10	—	—	—	—	—
		80-100	—	—	10	—	—	—	—
	BLH	15-60	—	22	—	—	—	—	—
		70	—	22	—	—	—	—	—
		80-100	—	—	22	—	—	—	—
	HBL	15-55	—	65	—	—	—	—	—
		60-100	—	—	65	—	—	—	—
	BLE (GFCI)	15-30	10	—	—	—	—	—	—
		40-60	—	10	—	—	—	—	—
	BLEH (GFCI)	15-30	22	—	—	—	—	—	—
		15-60	—	22	—	—	—	—	—
BLF (GFCI)	15-30	10	—	—	—	—	—	—	
	40-60	—	10	—	—	—	—	—	
BLHF (GFCI)	15-30	22	—	—	—	—	—	—	
	40-60	—	22	—	—	—	—	—	
BAF	15-20	10	—	—	—	—	—	—	
BAFH	15-20	22	—	—	—	—	—	—	
BQD	15-60	—	—	65	—	—	14	—	14
	70-100	—	—	—	65	—	14	—	14
ED2	15-60	—	—	—	100	42	42	—	30
	70-100	—	—	—	100	42	42	—	30
125	NGB	15-60	100	100	100	25	25	—	14
		70-100	100	100	100	25	25	—	14
		110-125	100	100	100	25	25	—	14
	NEB	15-60	85	85	85	35	35	22	35
		70-100	85	85	85	35	35	22	35
		110-125	85	85	85	35	35	22	35
	HEB	15-60	100	100	100	65	65	25	42
		70-100	100	100	100	65	65	25	42
		110-125	100	100	100	65	65	25	42
	ED4	15-60	65	—	—	22	—	—	—
		70-100	—	—	65	—	18	—	30
		110-125	—	—	65	—	18	—	—
ED6	15-60	—	—	65	—	25	18	30	
	70-100	—	—	65	—	25	18	—	
	110-125	100	—	—	—	—	—	—	
HED4	15-60	100	—	—	—	—	—	—	
	70-100	—	—	—	65	—	—	—	
	110-125	—	—	—	65	—	—	—	

#### Branch Breaker Connector Kits

Kit Number	Description	Contents
BBKB32	BL/BQD 6-pole 3" branch breaker kit Cu/Tin	Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware
BBKEB32	NEB/HEB branch breaker kit Cu/Tin	Kit contains breaker support, inter-phase barrier, (3) A/C connectors, (1) B connector, hardware
BBKED32	ED 6-pole 3" branch breaker kit Cu/Tin	Kit contains breaker support, inter-phase barrier, (3) A/C connectors, (1) B connector, hardware
BBKNB32	NGB 6-pole 3" branch breaker kit Cu/Tin	Kit contains top barrier, (3) A/C connectors, (1) B connector, hardware

**Note:** BL, HLB, BLH and BQD 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.

# Panelboards

## Type P3 Panelboard Factory Assembled/Modifications and Additions

*Selection*

### Enclosure Modifications

Description
Type 1 with gasket Type 1 with dripshield Type 3R/12 - Dustproof Type 4/4X - Standard type 304 Stainless Steel
Hinged trim Door-in-door trim Screw to the box trim Trim with gasketed door Stainless steel trim
Painted boxes Custom colours

### Panel Skirts

See page 6-47

### Panel Modifications

#### Bus Material

Represented by "A", "C" or "E" in the 11th digit of the catalogue number

Standard bussing is tin plated Al, alternate bus bar material can be selected: <ul style="list-style-type: none"> <li>▪ Tin plated copper</li> <li>▪ Silver plated copper - optional</li> </ul>
---

#### Branch Breaker Accessories

See section 5. <ul style="list-style-type: none"> <li>▪ Handle blocks</li> <li>▪ Handle locks</li> <li>▪ Aux. Contacts<sup>①</sup></li> <li>▪ UVR<sup>①</sup></li> </ul>
--

### Panel Modifications (cont.)

#### Subfeed (Double) Lugs -

For Main Lug Panelboards Only

Ampere Rating	Connector Cu / Al Wire Range
400	(2) #2 - 600 kcmil Al/Cu

**Feed-Thru Lugs** — Cannot Be Used in Conjunction with SPD. See page 6-36 for unit space adders and compatibility with other options

Ampere Rating	Connector Cu / Al Wire Range
400	(1) #2 - 600 kcmil Al/Cu and (1) 1/0 - 250 kcmil Al/Cu
600	(2) #2 - 600 kcmil Al/Cu
800	(2) #2 - 600 kcmil Al/Cu

#### Grounding of Panelboards

Ground Bars are shipped with the panel interior factory mounted.

- Non-Insulated Equipment Ground Bar
- Copper Non-Insulated Ground Bar
- Al Insulated Equipment Ground Bar
- Cu Insulated Equipment Ground Bar

#### Shunt Trip on Branch

BL, BLH, HBL, NGB, ED2, ED4, HED4, ED6, uses 1" unit space for shunt trip.

#### Surge Protective Devices See section 9

- TPS3 01
  - Bus connected
  - Internally mounted (30A breaker required to feed SPD)
  - Externally mounted in a 15" high aux. enclosure (30A breaker required to feed SPD)
- TPS3 09
  - Internally mounted (20A breaker required to feed SPD)
  - Externally mounted (20A breaker required to feed SPD)
- TPS3 12 (Sold separately)
  - Externally mounted (40A breaker required to feed SPD)

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

# Panelboards

## Type P3 Panelboard Standard Modifications

*Selection*

### Option Combinations

Amps	Incoming	Subfeed Lugs	Feed-thru Lugs	200% Neutral	Min. Box Size - Inches (mm)	Unit Space - Inches (mm)
400	Main Lug Only	• —	— •	• •	56 (1422) 56 (1422)	21 (533) 15 (381)
600	Main Lug Only	—	— •	• —	56 (1422) 56 (1422)	21 (533) 15 (381)
800	Main Lug Only	—	— •	• —	56 (1422) 56 (1422)	21 (533) 9 (229)

• Available as an option

### Compression Lugs

Style	Amp Rating	Breaker Type	Compression Connectors	Box Height Addition
MLO	400	N/A	(1) 250 - 600 kcmil Cu	—
	600	N/A	(1) 400 - 500 kcmil Al or (1) 400 - 600 kcmil Cu	— —
	800	N/A	(2) 250 - 600 kcmil Cu	—

NOTE: Standard compression lugs are range taking lugs and may require a particular crimping tool to accommodate the range. Consult factory for information.

### Alternate Lugs

Style	Amp Rating	Breaker Type	Standard AL Connectors	Box Height Addition - Inches (mm)
MLO	400	N/A	(1) 250 - 750 kcmil or (2) #3/0 AWG - 250 kcmil Al/Cu	6 (152)
	800	N/A	(4) #4 - 500 kcmil Al/Cu	6 (152)

### Type P3 Miscellaneous Parts and Accessories

Catalogue Number	Description
12-1110-01	1 Directory card for 1-42 circuits
11-1824-01	1 Plastic directory card holder
MCHK	1 Metallic directory card holder
FPLK2	2 Spare Fas-latch trim locks with 2 keys
DFK1	BL, BQD, ED deadfront kit for 1" (include 7 different length centre strips)
DFFP3	1 Filler plate 3"
EGK	1 Aluminum non-insulated ground bar
ECGK	1 Copper non-insulated ground bar
EWK2	1 End wall with knockouts (24"W x 7.75"D)
IGK	1 Insulated Al ground bar
ICGK	1 Insulated Cu ground bar
IMK1	1 Interior adjusting kit
JCK24	24 Trim screws and 24 trim clips
NBK03	1 Number Strip 1-42
NBK04	1 Number Strip 43-84
NBK05	1 Number Strip 85-126
NBK3	1 Numbering Button Kit 1@42
NBK4	1 Numbering Button Kit 43@84
NBK5	1 Numbering Button Kit 85@126
QF3-UL	1 Filler Plate 1"
DSK724	1 Dripshield 24"W x 7.75"D



# Panelboards

## Power and Distribution

*Selection*

Type S5 (SPP6)

**600 Volts AC, 250 Volts DC Maximum  
1200 Ampere Mains  
1200 Ampere Maximum Branch  
UL & CSA Short Circuit Rating —  
200,000A IR Maximum**

**Branch Breaker Symmetrical  
Interrupting Capacity**

**Based on Underwriters' Test  
Procedure**

Meets 1996 NEC wire bending  
requirement, section 373-6.  
CSA - C22.2 No. 0.12

### Panelboards

Listed by Underwriters' Laboratories,  
Inc., under "Panelboards" File #E2269  
for interiors and #E4016 for boxes and  
fronts. Meet Federal Specification  
W-C375B/Gen. & CSA File #LR93833.

### Service

600 Volts AC, 250 Volts DC, Maximum.  
1 Phase, 3 Wire; 3 Phase, 3 Wire; or  
or 3 Phase, 4 Wire.

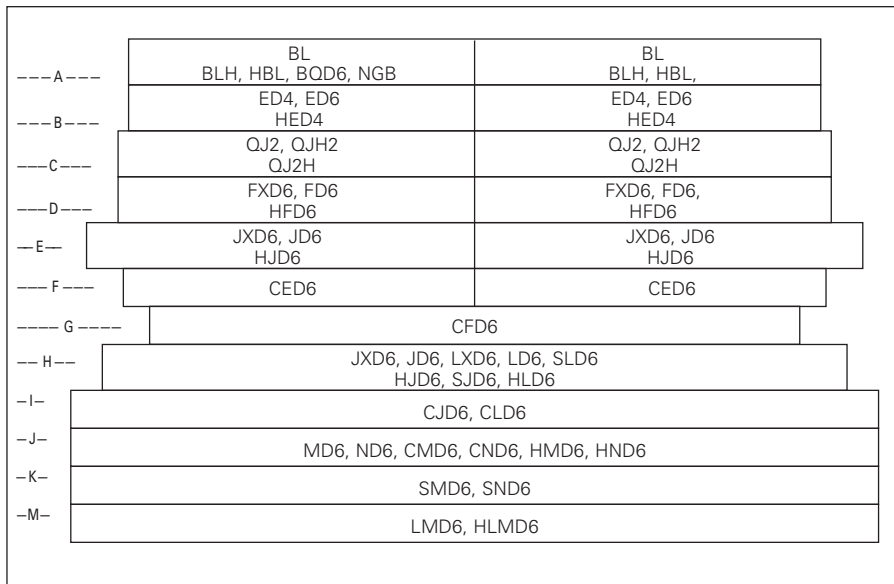
### Panelboard Fronts and Doors

Standard panelboards are furnished  
with 4 piece trim with ventilation.  
Fronts are fabricated from code gauge  
steel and finished ASA61.

### Main Breakers

All 400A and 1200A frame main break-  
ers are mounted horizontally.

### Branch Breaker Side Gutters



### Main Lug Connectors

Ampere Rating	Connectors Suitable for Cu or Al
400	(1)-#3/0 AWG-500MCM
400	(2)-#3/0 AWG-250MCM
600	(2)-#3/0 AWG-500MCM
800	(3)-#3/0 AWG-500MCM
1200	(4)-#3/0 AWG-500MCM

### End Gutters

Ampere Rating	Main Lug (inches)	Main Breaker (inches)
400/600	15.967	13.0
800/1200	15.967	13.0

### Boxes

38" wide, 12.75" deep (Type 1)  
38" wide, 14.25" deep (Type 3R/12)

### Panelboard Specifications

Maximum Panel Ampere	Unit Space (MLO)	Box Height				
400A	30"	60"	120/240Volts 1 Phase, 3 Wire	120/208 Volts 3 Phase, 4 Wire	600 Volts 3 Phase, 3 Wire	347/600 Volts 3 Phase, 4 Wire
600A	45"	75"				
800A	60"	90"				
1200A	60"	90"				

Reference Letter	Panel Width (inches)
	38 (S5)
A	14.0
B	10.0
C	8.75
D	8.25
E	7.925
F	7.615
G	11.769
H	13.425
I	8.956
J	13.0
K	12.0
M	13.0

# Panelboards

## Power and Distribution

Selection

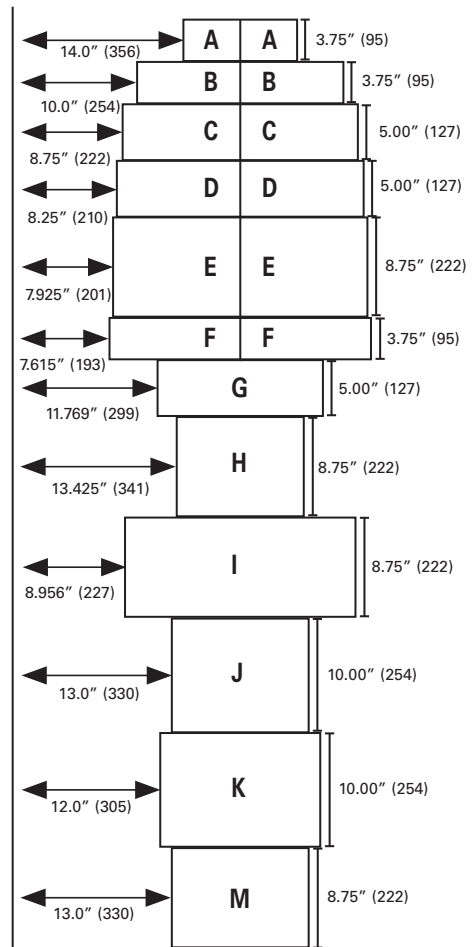
### Main Breaker Selection

Ampere Rating	Breaker Type	Maximum Interrupting Rating (KA)			Available Trip Values
		240V	480V	600V	
400	JXD6	65	35	25	200, 225, 250, 300, 350, 400
	JD6	65	35	20	200, 225, 250, 300, 350, 400
	HJD6	100	65	35	200, 225, 250, 300, 350, 400
	CJD6	200	150	100	200, 225, 250, 300, 350, 400
	SJD6	65	35	25	200, 300, 400
600	LXD6	65	35	25	450, 500, 600
	LD6	65	35	25	250, 300, 350, 400, 450, 500, 600
	HLD6	100	65	35	250, 300, 350, 400, 450, 500, 600
	CLD6	200	150	100	450, 500, 600
	SLD6	65	35	25	300, 400, 500, 600
800	MD6	65	50	25	500, 600, 700, 800
	HMD6	100	65	50	500, 600, 700, 800
	CMD6	200	100	65	500, 600, 700, 800
	SMD6	65	50	25	600, 700, 800
1200	ND6	65	50	25	800, 900, 1000, 1200
	HND6	100	65	50	800, 900, 1000, 1200
	CND6	200	100	65	900, 1000, 1200
	SND6	65	50	25	900, 1000, 1200

### Branch Circuit Breaker Selection<sup>①</sup>

Breaker Type	Available Trip Value Ampere Ratings	Mounting Height Inches (mm)			Max IC Rating (KA)		
		Twin	Single	Gutter <sup>⑥</sup>	240V	480V	600V
BL	15, 20, 30, 40, 50, 60, 70, 80, 90, 100	3.75" (95) <sup>②</sup>	—	A	10	—	—
BLF (GFCI)	15, 20, 30, 40, 50, 60	3.75" (95) <sup>②</sup>	—	A	10	—	—
BLE (GFCI)	15, 20, 30	3.75" (95) <sup>②</sup>	—	A	10	—	—
BLH	15, 20, 30, 40, 50, 60, 70, 80, 90, 100	3.75" (95) <sup>②</sup>	—	A	22	—	—
BLH (GFCI)	15, 20, 30, 40, 50, 60	3.75" (95) <sup>②</sup>	—	A	22	—	—
BQD6 <sup>⑤</sup>	15, 20, 30, 40, 50, 60, 70	3.75" (95) <sup>②③</sup>	—	A	65	—	10
ED2	15, 20, 30, 40, 50, 60, 70, 80, 90, 100	3.75" (95) <sup>②③</sup>	3.75" (95) <sup>③④</sup>	B	10	—	—
ED4	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 125	3.75" (95) <sup>②③</sup>	3.75" (95) <sup>②③</sup>	B	65	18	—
ED6	15, 20, 30, 40, 50, 60 70, 80, 90, 100, 110, 125	3.75" (95) <sup>②③</sup>	3.75" (95) <sup>②③</sup>	B	100	18	18
		3.75" (95) <sup>②③</sup>	3.75" (95) <sup>②③</sup>	B	100	42	18
CED6	15, 20, 30, 40, 50, 60, 70, 80, 90, 100 110, 125 —	3.75" (95) <sup>②③</sup>	3.75" (95) <sup>②③</sup>	F	200	200	100
		3.75" (95) <sup>②③</sup>	F	—	—	—	100
QJ2	60, 70, 80, 90, 100, 125, 150, 175, 200, 225	5" (127)	5" (127)	C	10	—	—
QJH2	60, 70, 80, 90, 100, 125, 150, 175, 200, 225	5" (127)	5" (127)	C	22	—	—
QJ2-H	60, 70, 80, 90, 100, 125, 150, 175, 200, 225	5" (127)	5" (127)	C	42	—	—
FXD6	70, 80, 90, 100, 125, 150, 175, 200, 225, 250	5" (127)	5" (127)	D	65	35	—
HFD6	70, 80, 90, 100, 125, 150, 175, 200, 225, 250	5" (127)	5" (127)	D	100	65	—
CFD6	70, 80, 90, 100, 125, 150, 175, 200, 225, 250	—	5" (127)	G	200	200	—
JXD2	200, 225, 250, 300, 350, 400	8.75" (222)	8.75" (222)	E	65	—	—
JXD6, JD6	200, 225, 250, 300, 350, 400	8.75" (222)	8.75" (222)	E	65	35	25
HJD6	200, 225, 250, 300, 350, 400	8.75" (222)	8.75" (222)	E	100	65	35
CJD6	200, 225, 250, 300, 350, 400	—	8.75" (222)	I	200	150	100
SJD6 <sup>④</sup>	200, 300, 400	—	8.75" (222)	H	65	35	25
SHJD6 <sup>④</sup>	200, 300, 400	—	8.75" (222)	H	100	65	35
SCJD6 <sup>④</sup>	200, 300, 400	—	8.75" (222)	I	200	150	100
LXD6, LD6	450, 500, 600	—	8.75" (222)	H	65	35	25
HLD6	250, 300, 350, 400, 450, 500, 600	—	8.75" (222)	H	100	65	35
CLD6	450, 500, 600	—	8.75" (222)	I	200	150	100
SLD6 <sup>④</sup>	300, 400, 500, 600	—	8.75" (222)	H	65	35	25
SHLD6 <sup>④</sup>	300, 400, 500, 600	—	8.75" (222)	H	100	65	35
SCLD6 <sup>④</sup>	300, 400, 500, 600	—	8.75" (222)	I	200	150	100
LMD6	500, 600, 700, 800	—	8.75" (222)	M	65	50	25
HLMD6	500, 600, 700, 800	—	8.75" (222)	M	100	65	50
MD6	500, 600, 700, 800	—	10" (254)	J	65	35	25
HMD6	500, 600, 700, 800	—	10" (254)	J	100	65	35
CMD6	500, 600, 700, 800	—	10" (254)	J	200	150	100
SMD6 <sup>④</sup>	600, 700, 800	—	10" (254)	K	65	35	25
SHMD6 <sup>④</sup>	600, 700, 800	—	8.75" (222)	H	100	65	50
SCMD6 <sup>④</sup>	500, 600, 800	—	8.75" (222)	I	200	100	65
ND6	800, 900, 1000, 1200	—	10" (254)	J	65	50	25
HND6	800, 900, 1000, 1200	—	10" (254)	J	100	65	35
CND6	800, 900, 1000, 1200	—	10" (254)	J	200	150	100
SND6 <sup>④</sup>	800, 1000, 1200	—	10" (254)	K	65	35	25
SHND6 <sup>④</sup>	800, 900, 1000, 1200	—	8.75" (222)	H	100	65	50
SCND6 <sup>④</sup>	800, 900, 1000, 1200	—	8.75" (222)	I	200	100	65
NGB	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125	3.75" (95)	—	—	100	—	—
NEB	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125	3.75" (95)	—	—	85	35	22
HEB	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 125	3.75" (95)	—	—	100	65	25
NDG	50, 60, 70, 80, 90, 100, 110, 125, 150	5" (127)	—	—	65	35	18
LDG	50, 60, 70, 80, 90, 100, 110, 125, 150	5" (127)	—	—	200	100	25
NFG	100, 110, 125, 150, 175, 200, 225	5" (127)	—	—	65	35	18
LFG	100, 110, 125, 150, 175, 200, 225	5" (127)	—	—	200	100	25
NJG	250, 300, 350, 400	6.25" (159)	6.25" (159)	—	65	35	25

### Branch Breaker Gutter Dimensions For 38"W Distribution Section



- ① Space includes housing frame plate with blank cover plate. Provision includes all necessary mounting hardware, less circuit breaker, and includes housing frame cover plate with breaker handle opening.
- ② 1 to 6 poles may be mounted in 3.75" (95) of unit space
- ③ Accessories such as shunt trips on three pole breakers require 6.25" (159) of unit space.
- ④ Ground fault is not available on branch Sensitrip breakers.
- ⑤ Also 10KA at 600V/347 Volts.
- ⑥ Refer to Table 5 for layout dimensions.

6 PANELBOARDS

# Panelboards

## Modifications and Additions

## Selection

### Type S5

When required, special constructions or additions to standard panelboards may be specified for all **factory-assembled** Power and Distribution Panelboards. Below and on the next page are listed many of those available for Type S5 panelboards. In no case do these apply to **Narrow** (Column) Width Lighting Panelboards or **Unassembled** Panelboards.

#### 1. Miscellaneous

NEMA TYPE
Type 1
Type 2 (Drip-proof)
Type 3R
Type 12

#### 2. Painted Finish

Touch-Up Paint (ASA61, Light Gray) 12 oz. aerosol can, Catalog Number TUP61
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#### 3. Miscellaneous Accessories

Nameplate — laminated, engraved Tamper-Resistant Screws
--

#### 4. Devices Mounted on Gutter Cover — Includes Device, Mounting — Wired or Unwired

Toggle Switch — SPST or 3-way; 15A
Pilot Light — General Purpose, Neon or Incandescent
Pushbutton

#### 5. Feed-Thru Lugs<sup>①</sup> (One Set Per Panel)

Ampere Rating			Unit Space (Additional inches)
	3-Pole	2-Pole	MLO
400			10
600	Consult Sales	Consult Sales	10
800			17.5
1200			17.5

#### 6. MLO Compression Lugs —

Available as main lugs and neutral lug.

Ampere Rating	Aluminum (Specify Size)	Copper (Specify Size)	Deduct From Available Unit Space (inches)
400			5
600	Consult Sales	Consult Sales	5
800	Office	Office	5
1200			5

#### 7. Grounding of Panelboards<sup>③</sup>

Non-Insulated Equipment Ground Bus Including Ground Lug  
Insulated Equipment Ground Bus Including Ground Lug

#### 8. Remote Control Switches<sup>④⑤</sup>

600V AC Ampere Rating	ASCO 920 Mechanically Held <sup>⑥⑦</sup>		Siemens CLH Electrically Held <sup>⑧</sup>	
	2-Pole	3-Pole	2-Pole	3-Pole
30	Unit space 20"		Unit space 20"	
60				
75				
100				
150 <sup>⑨</sup>				
200 <sup>⑨</sup>				
225				

#### 9. Increased Capacity Neutral

Ampere Rating Phase	Unit Space (inches)	
	Neutral	
400	600	None
400	800	None
600	1200	None
800	1200	None

#### 10. Circuit Breaker Accessories

Breaker Type
--------------

**Handle Blocking Device**  
Blocks handle in either the "ON" or "OFF" position. Available for:

BL, BLH, HBL, BQD6, QJ2, QJH2, QJ2-H, NGB
ED4, ED6, HED4, CED6
FXD6, FD6, HFD6, CFD6
JXD6, JD6, HJD6, CJD6, SJD6, LXD6, LD6, HLD6, CLD6, SLD6
MD6, HMD6, CMD6, SMD6, ND6, HND6, CND6, SND6

#### Padlocking Device — Padlocks in "OFF" position. Available for:

BL, BLH, HBL, BQD6, QJ2, QJH2, QJ2-H, NGB
ED4, ED6, HED4, CED6
FXD6, FD6, HFD6, CFD6
JXD6, JD6, HJD6, CJD6, SJD6, LXD6, LD6, HLD6, CLD6, SLD6
MD6, HMD6, CMD6, SMD6, ND6, HND6, CND6, SND6

#### 11. Ground Fault Sensing Relay Kit<sup>⑩</sup> Equipment Protection (30 ma)

For Use with Breaker Types	Number of Poles	Description
ED4, ED6, HED4	1, 2, 3	Basic kit Basic kit with bell alarm

#### 12. Main Bus

Standard main bus and ground bus are tin plated aluminum. For copper main bus, neutral bus and ground bus change prefix 'A' to 'C' on catalog number and contact your sales office for pricing.

#### 13. Copper Lugs — For Main Lug Only Panels

Standard main lugs and neutral lugs are tin plated aluminum, UL & CSA listed for use with aluminum/copper cables. For copper lugs in the mains and neutral for use with copper cables only, contact sales.

#### 14. Shunt Trip on Main and Branches

Description <sup>⑪⑫⑬⑭</sup>
BL, BQD6, NGB (branch only)
QJ2, QJ2H, QJH2, ED2, ED4, HED4 (branch only)
All others through 600A
800A and 1200A

#### 15. Sentron TPS (TVSS Modules)

160 KA
240 KA
Options Surge Counter Remote Indicator

① For use on main lug, main breaker or main switch panels without subfeed breakers.

② For increase in panelboard height — Consult local sales office.

③ Ground bar not installed in box.

④ For short circuit ratings with remote control switches, consult sales office.

⑤ Available in 90" high enclosure only. Unit space is 42 1/2" with Test and Monitor Panel; 45" without Test and Monitor Panel.

⑥ Not available on Sensitrip III.

⑦ For required unit space — consult local sales office.

⑧ Price does not include control power transformer.

⑨ Price 600 Volt 7 1/2" high units.

Mounting height increases to 6.25" when shunt trip is required.

⑩ Shunt Trip on 100A frame breakers increases mounting height to 6.25" for twin mounting.

⑪ Not CSA approved.



# Panelboards

## Modifications and Additions Replacements for Circuit Breakers

Selection

### Replacement Connecting Strap Guide

The following table may be used to obtain the proper connector kit by measuring the exterior dimensions of the panel. Every attempt has been made to make this table complete and accurate. The table is based on panels produced by ITE, Bulldog and Siemens from 1958 to present. Should any questions arise please contact your Siemens sales office for replacements.

Panelboard				
Tub Width	Depth	Panel Type	Replacement Max Amps	Note
30" - 36" - 42"	9"	OLD CDP	400	MCCB only.
	9.75"	OLD CDP	600	MCCB only.
32" - 38"	13.75"	CDP/VB6	1200A	MCCB series 6 connectors
			600A	"VB" style units only (*)
38"	12.75"	SPP/FPP6	1200A	MCCB series 6 connectors
			600A	"VK" or "VB" style (*)

\* If switch unit width is 17" it is a vacubreak. If switch unit width is 23" or 28" it is a "VK" switch.

### Connecting Strap For Use With SPP/FPP, S5, F2<sup>④</sup>

Breakers	Height Inches (mm)	Series 6 Number
BQ, BQH, HB	3.75" (95)	6EQ6 <sup>②③</sup>
BL, BLH, HBL, BQD, BQD6	3.75" (95)	6BL2C <sup>③⑤</sup>
ED2, ED4, ED6, HED4	3.75" (95)	6E62 <sup>③②</sup>
CED6	3.75" (95)	6CLE2 <sup>①</sup>
QJ2, QJH2, QJ2H	5" (127)	6QJ2 <sup>①</sup>
FXD6, FD6, HFD6	5" (127)	6F62 <sup>②</sup>
CFD6	5" (127)	6CLF1C <sup>⑤</sup>
JXD2, JXD6, JD2, JD6, HJD6 SJD6, SHJD6	8.75" (222)	6JJ62 <sup>①</sup>
CJD6, SCJD6	8.75" (222)	6CLJ1C <sup>⑤</sup>
LXD6, LD6, HLD6, SLD6, SHLD6, SJD6, SHJD6	8.75" (222)	6LL61C <sup>③</sup>
CLD6	8.75" (222)	6CLL1C <sup>⑤</sup>
SCLD6	8.75" (222)	6SCL61C <sup>⑤</sup>
MD6, HMD6, CMD6, SCMD6, SHMD6	10" (254)	6M61C <sup>③</sup>
ND6, HND6, CND6 SND6, SHND6, SCND	10" (254)	6N61C <sup>③</sup>

### Connecting Strap Kits For Use With Circuit Breakers in S5

Breaker Type	Height Inches (mm)	Mounting	Catalogue Number
NGB	3.75" (95)	D	SNBD
NEB, HEB	3.75" (95)	D	SEBD
NDG, HDG, LDG	5" (127)	D	SDGD
NFG, HFG, LFG	5" (127)	D	SFGD
NJG, HJG, LJG	6.25" (159)	D	SJG2D
NJG, HJG, LJG	6.25" (159)	S	SJG1D

① These are aluminum connectors. If copper required is please add suffix C.

② 3.75" (95) plate accommodates six 1-pole breakers.

③ 10" (254) plate accommodates eighteen 1-pole breakers.

④ These connectors are available in copper only.

⑤ Can be used as fillers or in place of circuit breakers, VK or VB Switches.

### Blank Plates

For use with Series 6 CDP Panelboards, S5, F2, FCI and FCII Switchboards.	
Height	SPP/FPP/CDP/VB 6
1.25"	6FPB01
2.50"	6FPB02
3.75"	6FPB03
5.00"	6FPB05
10.00"	6FPB10
15.00"	6FPB15

### Connecting Strap Kits and Front-Filler Plates<sup>①</sup>

#### For use with NDP-CDP-7, S3

Breakers	Catalogue Number
BQD6 (S3 only)	7 BQD6-2
BL, BLH, HBL,	7 BL-2
QJ2, QJH2, 2 Pole	7 QJ2-1
QJ2, QJH2 3 Pole Single unit, Panel Mount	7 QJ3-1
QJ2, QJH2 3 Pole Double unit, Panel Mount	7 QJ3-2
EC4, ED2, ED4, ED6, HED4, HED6	7 E6-2
Filler 1 Pole	QF3-UL

# Panelboards

## Fusible/Power and Distribution

Selection

### Type F2

**600 Volts AC, 250 Volts DC Maximum**  
**600 Ampere Main Switch,**  
**1200 Ampere Main Lugs Only**  
**600 Ampere Maximum Branch**  
**UL & CSA Short Circuit Rating –**  
**200,000A IR Maximum**

Meets 1996 NEC wire bending requirement, section 373-6.  
 CSA - C22.2 No. 0.12

### Panelboards

Listed by Underwriters' Laboratories, Inc., under "Panelboards" File #E2269 fo interiors and #E4016 for boxes and fronts & CSA File #LR93833.

### Service

600 Volts AC, 250 Volts DC, Maximum. 1 Phase, 3 Wire; 3 Phase, 3 Wire; or 3 Phase, 4 Wire.

### Boxes

38" wide, 12.75" deep, Type 1

### Panelboard Fronts and Doors

Standard panelboards are furnished with 4 piece trim. Fronts are fabricated from code gauge steel and finished ASA61.

### Fuses

The Proper Fuse Type for the Application is Selected Using the Following Parameters:

- Voltage Requirements
- Conductor Ampacity
- Horsepower Requirements
- Maximum Available RMS Fault Current
- UL & CSA Fuse Class

### UL & CSA Fuse Classes

Class	Amperes	Volts	Interrupting Ratings	$I^2t, I_p$	Circuits
H (code)	1-600A	250 and 600V or less AC	10,000A	—	Less than 10,000A available
K <sup>®</sup>	1-600A	250 and 600V or less AC	50,000A	—	Feeder circuits
J	1-600A	600V or less	To 200,000A	$I^2t$ -Low $I_p$ -Low	Feeder circuits (motor load small %)
RK1	1/10-600A	600V or less 250V or less	To 200,000A	$I^2t$ -Slightly > J $I_p$ -Slightly > J	Feeder circuits (motor load small %)
RK5	1/10-600A	600V or less 250V or less	To 200,000A	$I^2t$ > RK-1 $I_p$ > RK-1	Motor starting currents a factor
T	1-600A	300 and 600V or less AC	To 200,000A	$I^2t$ -Low $I_p$ -Low	Non-motor loads
L	601-5000A	600V or less	To 200,000A	$I^2t$ -Low $I_p$ -Low	Feeder circuits motor loads

®Lug is single barrel construction, rated for 2-250 kcmil or 1-500 kcmil cables.

®Fuse clips do not prohibit the use of Class H type fuse in switch.

### Main Switch Panel Connectors

Ampere Rating	Connectors Suitable for Cu or Al
400	(1) - 750 MCM OR (2) - 250 MCM (Cu or Al)
600	(2) - 750 MCM OR (4) - 250 MCM (Cu or Al)
800	(3) - #3/0 AWG-500 mcm
1200	(4) - #3/0 AWG-500 mcm

### Main Lug Panels

Ampere Rating	Connectors Suitable for Cu or Al
400 <sup>®</sup>	(1) - #3/0 AWG-500 mcm (2) - #3/0 AWG-250 mcm
600	(2) - #3/0 AWG-500 mcm
800	(3) - #3/0 AWG-500 mcm
1200	(4) - #3/0 AWG-500 mcm

### Branch Switch Connectors

Switch Ampere Rating	Wire and Cable Range
30	(1) - #14-#2 AWG (Cu or Al)
60	(1) - #14-#2 AWG (Cu or Al)
100	(1) - #14-#1/0 AWG (Cu or Al)
200	(1) - #6 AWG-350 kcmil (Cu or Al)
400	(1) - 750 MCM OR (2) - 250 MCM (Cu or Al)
600	(2) - 750 MCM OR (4) - 250 MCM (Cu or Al)

### Gutters

Ampere Rating	End Gutters (Minimum inches)	Side Gutters (Minimum inches)
400	12	7.9
600	12	7.9
800	12	7.9
1200	12	7.9

### Maximum VB HP Ratings

Amp Rating	3 Phase			Single Phase	DC
	Volts			Volts	Volts
	240	480	600	240	250
30	7.5	15	20	3	5
60	15	30	50	10	10
100	30	50	50	15	20
200	50	—	—	—	40
400	—	—	—	—	50

### Maximum VK HP Ratings

Amp Rating	3 Phase			Single Phase	DC
	Volts			Volts	Volts
	240	480	600	240	250
30	7.5	15	20	3	5
60	1.5	30	50	10	10
100	30.0	50	75	15	20
200	60.0	125	150	15	40

# Panelboards

## Power and Distribution

*Selection*

Type F2

Maximum Panel Ampere	Unit Space (MLO)	Box Height				
400A	30"	60"	120/240Volts 1 Phase, 3 Wire	120/208 Volts 3 Phase, 4 Wire	600 Volts 3 Phase, 3 Wire	347/600 Volts 3 Phase, 4 Wire
600A	45"	75"				
800A	60"	90"				
1200A	60"	90"				

### Branch Switches 600V Maximum<sup>①</sup>

Rating Ampere	Maximum Voltage	Fusing (1)	Mounting Height F2 38" W
30/30A (VK)	600V	J, C	6.25(159)
60/60A (VK)		J, C	6.25(159)
100/100A (VK)		J, C	7.5(190)
200A (VB)		J, Code, R	10(254)
200/200A (VK)		J	10(254)
400A (VB)		J, Code, R,T	15(381)
600A (VB)		J, Code, R,T	15(381)

### Fuse Clip provisions per unit

Class R	Class T
Rating Ampere	Rating Ampere
30	30
60	60
100	100
200	200
400	400
600	600

① Single or twin units as listed and are valid for class C or J fuses. If class R or T fuse provisions are required add per table above.  
 ② Not applicable to VB style units 400A and 600A.

③ Use of auxiliary switch kit will require the use of a 7.5" (190) high unit for 30 and 60 Amp. switches.  
 ④ Refer to Siemens for single phase and DC horsepower requirements.

⑤ Ratings are based on UL test procedure. CSA will not recognize ratings above 100Hp.

# Panelboards

## Modifications and Additions

*Selection*

### Type F2

When required, special constructions or additions to standard panelboards may be specified for all **factory-assembled** Power and Distribution Panelboards. Below and on the next page are listed many of those available, for Type F2 panelboards. In no case do these apply to **Narrow** (Column) Width Lighting Panelboards.

#### 1. Miscellaneous

NEMA TYPE
Type 1
Type 2 (Drip-proof)
Type 3R
Type 12

#### 2. Painted Finish

Description
Touch-Up Paint (ASA61, Light Gray) 12 oz. aerosol can, Catalog Number TUP-61

#### 3. Miscellaneous Accessories

Nameplate — laminated, engraved Tamper-Proof Screws
--

#### 4. Devices Mounted on Gutter Cover Includes Device, Mounting — Wired or Unwired

Description
Toggle Switch — SPST or 3-way; 15A
Pilot Light — General Purpose, Neon or Incandescent
Pushbutton

#### 5. Grounding of Panelboards<sup>③</sup>

Non-Insulated Equipment Ground Bus Including Ground Lug  
Insulated Equipment Ground Bus Including Ground Lug

#### 6. Remote Control Switches<sup>④</sup> 600V AC

600V AC Ampere Rating	ASCO 920 Mechanically Held <sup>⑤⑥</sup>		Siemens CLH Electrically Held <sup>⑦</sup>	
	2-Pole	3-Pole	2-Pole	3-Pole
30 60 75 100 150 <sup>⑧</sup> 200 <sup>⑧</sup> 225	Unit space 20"		Unit space 20"	

#### 7. Increased Capacity Neutral

Ampere Rating		Unit Space (inches)
Phase	Neutral	
400	600	None
400	800	None
600	1200	None
800	1200	None

#### 8. Main Bus

Standard main bus and ground bus is tin plated aluminum. For copper main bus, neutral bus and ground bus change prefix 'A' to 'C' on catalog number and contact your sales office for pricing.

#### 9. Copper Lugs — For Main Lug Only Panels

Standard main lugs and neutral lugs are tin plated aluminum, UL & CSA listed for use with aluminum/copper cables. For copper Lugs in the mains and neutral for use with copper cables only, contact sales.

#### 10. Feed-Through Lugs<sup>①</sup> (One Set Per Panel)

Ampere Rating			Unit Space (Additional inches)
	3-Pole	2-Pole	MLO
400	Consult Sales Office	Consult Sales Office	10
600			10
800			17.5
1200			17.5

#### 11. MLO Compression Lugs

Available as main lugs and neutral lug.

Ampere Rating	Aluminum (Specify Size)	Copper (Specify Size)	Deduct From Available Unit Space (inches)
400			5
600			5
800			5
1200			5

#### 12. VK Switch Accessories

Item	Cat. No.
Fuse Pullers (2) 30/60 mp	FP2
100 amp	FP3
200 amp	FP4

#### 13. Sentron TPS (SPD Modules)

100 KA	200 KA	300 KA
150 KA	250 KA	
Options		
Surge Counter		
Remote Indicator		

① For use on main lug, main breaker or main switch panels without subfeed breakers.  
② For increase in panelboard height — Consult local sales office.  
③ Ground bar is not installed in box.

④ For required unit space — consult local sales office. Price includes increased enclosure height if required.  
⑤ Devices listed by Underwriters' Laboratories, Inc. When 2 wire control is required. Relay and Terminal Block (9" of unit space required).

⑥ For short circuit ratings with remote control switches consult sales office.  
⑦ Panelboard short circuit rating is limited to 5,000 RMS symmetrical.

# Panelboards

## Modifications, Additions Replacements for Fusible Switches

*Selection*

### Replacement Units<sup>①②</sup>

Amperes Rating	250 Volts <sup>®</sup> Code Fuses Cat. No.	600 Volts <sup>®</sup> Code Fuses Cat. No.	600 Volts J Fuses Cat. No.	600 Volts <sup>®</sup> R Fuses Cat. No.	600 Volts <sup>®</sup> T Fuses Cat. No.	600 Volts C Fuses Cat. No.	Height in (mm)
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#### VK Switch For Use With FPP6 Panelboards<sup>③④⑤</sup>

30/30	N/A	N/A	VK23611JP	VK23611RP	N/A	VK23611CP	6.25 (159)
60/60	N/A	N/A	VK23622JP	VK23622RP	N/A	VK23622CP	6.25 (159)
100/100	N/A	N/A	VK33633JP	N/A	VK33633TP	VK33633CP	7.5 (90)
200/200	N/A	N/A	VK73644JP	N/A	VK73644TP	N/A	10 (254)

#### VB Switch For Use With VB6 Panelboards

30/30	N/A	N/A	V7E3611JP	N/A	N/A		7.5(190)
60/60	N/A	N/A	V7E3622JP	N/A	N/A	N/A	7.5(190)
100/100	N/A	N/A	V7E3633JP	N/A	N/A	N/A	7.5(190)
200	V7F3204CP	V7F3604CP	V7F3604JP	V7F3604RP	N/A	N/A	10(254)
400	V7H3205CP	V7H3605CP	V7H3605JP	V7H3605RP	V7H3605TP	N/A	15(381)
600	V7H3206CP	V7H3606CP	V7H3606JP	V7H3606RP	V7H3606TP	N/A	15(381)

### Connecting Strap Kits

Rating Amperes	VB Switch VB6 <sup>®</sup> Cat. No.	VK Switch Series 6 Cat. No.
30/30 60/60 100/100	<b>VB6-71</b>	<b>VK6-57</b> <b>VK6-57</b> <b>VK6-58</b>
100 200/200 200 400-600	<b>VB6-71</b> N/A <b>VB6-71</b> <b>VB6-150</b>	N/A <b>VK6-72</b> <b>VK6-71</b> <sup>⑥</sup> N/A

Panelboard				
Tub Width	Depth	Panel Type	Replacement Max Amps	Note
30" - 36" - 42"	9"	OLD CDP	400	MCCB only.
	9.75"	OLD CDP	600	MCCB only.
32" - 38"	13.75"	CDP/VB6	1200A 600A	MCCB series 6 connectors "VB" style units only (*)
38"	12.75"	SPP/FPP6	1200A	MCCB series 6 connectors
			600A	"VK" or "VB" style (*)

### Blank Plates<sup>⑥</sup>

For use with Series 6 CDP Panelboards, S5, F2, FCI and FCII Switchboards.

Height	SPP/FPP/CDP/VB 6
1.25"	<b>6FPB01</b>
2.50"	<b>6FPB02</b>
3.75"	<b>6FPB03</b>
5.00"	<b>6FPB05</b>
10.00"	<b>6FPB10</b>
15.00"	<b>6FPB15</b>

① For Series 6 Main Devices above 200A, add suffix MS to Catalog Number when ordering.

② When 2-Pole units are required, use 3-Pole.

③ Series 6 (VB6, CDP6) replacement units and connector kits also accommodates FCI and FCII distributions interiors.

Units installed after October 1991 will be FPP6 type.

④ Refer to Siemens for units equipped with auxiliary switches.

⑤ Price is for two brackets – to be included with filler plates.

⑥ To be used in tubs with 30-200A, VB units or fillers in 12<sup>7</sup>/<sub>8</sub>" deep tub.

⑦ Can be used as fillers or in place of circuit breakers, VK or VB Switches.

⑧ Special order

# Panelboards

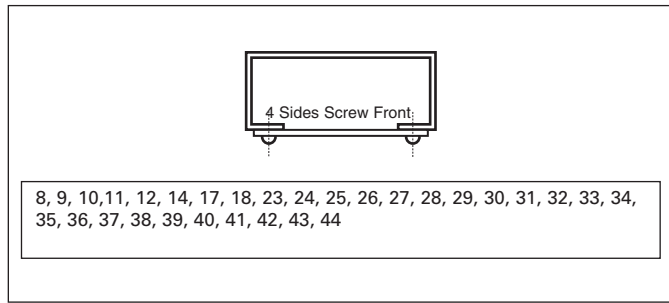
## Panel Skirts/System Types, AC & DC Voltages

### Conduit Enclosing Shield (Panel Skirts)

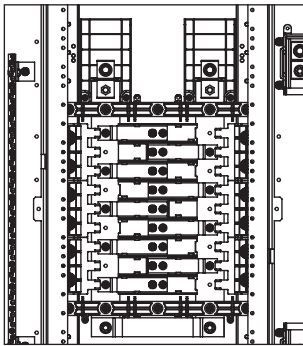
Sheet metal to cover conduits above or below a standard panelboard box.

Skirt Length	Width	Depth
8, 9, 11, 12	20.00	5.75
14, 17, 18, 23, 25	20.00	5.75
26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	20.00	5.75
37, 38, 39, 40, 41, 42, 43, 44	20.00	5.75
8, 9, 11, 12	24.00	7.75
14, 17, 18, 23, 25	24.00	7.75
26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	24.00	7.75
37, 38, 39, 40, 41, 42, 43, 44	24.00	7.75

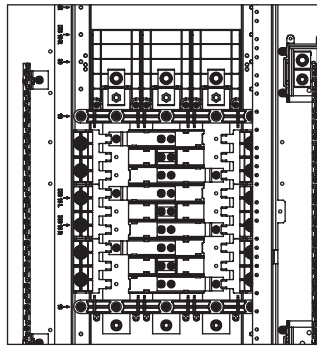
### Panel Skirts Standard Length



### Busing



Single-phase

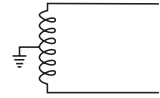


Three-phase

### AC Voltages

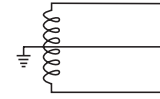
#### 1 phase, 2 wire

- 120V 1 phase, 2 wire
- 240V 1 phase, 2 wire



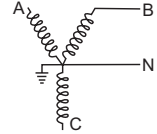
#### 1 phase, 3 wire

- 120/240V 1 phase, 3 wire



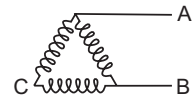
#### 1 phase, 2 wire, Wye

- 277V 1 phase, 2 wire



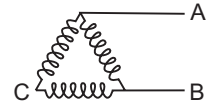
#### 1 phase, 2 wire, Delta

- 480V 1 phase, 2 wire



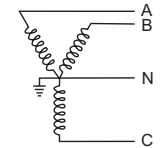
#### 1 phase, 3 wire, Delta

- 240/480V 1 phase, 3 wire



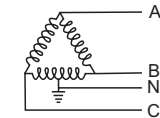
#### 3 phase, 4 wire, Wye

- 208Y/120V 3 phase, 4 wire
- 480Y/277V 3 phase, 4 wire
- 600Y/347V 3 phase, 4 wire



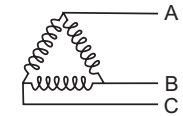
#### 3 phase, 4 wire, Delta

- 240/120V 3 phase, 4 wire
- 480/240V 3 phase, 4 wire



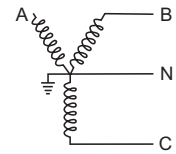
#### 3 phase, 3 wire, Delta

- 240V, 3 phase, 3 wire
- 480V, 3 phase, 3 wire
- 600V, 3 phase, 3 wire
- 240V, 3 phase, 3 wire, grounded B
- 480V, 3 phase, 3 wire, grounded B
- 600V, 3 phase, 3 wire, grounded B



#### 1 phase, 3 wire, Wye

- 208Y/120V 1 phase, 3 wire
- 480Y/277V 1 phase, 3 wire



### DC voltage

#### 1 phase, 2 wire

- 125Vdc, 2 wire

(Up to 125Vdc, MLO option only.)

