

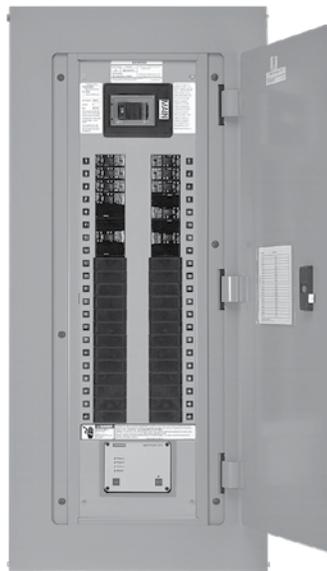
P1 Panelboards

Features

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

Note the following features, all found in the innovative P1 lighting panelboards:

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



- Three circuit sizes means only three box heights, regardless of main configuration through 250 amp and an additional three circuit version and boxes available at 400 amps.
- Suitable for use as service entrance given compliance with NEC.
- Bonding provisions are shipped with each panel.
- 240V and 480V / 277V for versions utilize identical boxes and fronts.

Voltage – 480Y / 277 Vac max.
250V Vdc max.

Amperage – 400 amp max.

Short Circuit Rating – 200 KAIC max. symmetrical or equal to the lowest rated device installed unless a series rating is indicated. Panels with subfeed or feed-thru lugs without a main device, circuit breaker, or fusible unit, are limited to a three-cycle rating. The three-cycle rating for the P1 panel is limited to 22 KAIC. Note that the main device may be mounted remote from the panel.

Bussing – The P1 panel meets the majority of the market's bussing requirements. The standard bussing is temperature rated aluminum. The rating is per the requirements of UL 67 - the standard for panelboards. All aluminum bussing is tin-plated. Optional bussing for the P1 panel is temperature rated copper. The copper bus option for the panel is tin-plated.

Weight – Approximate

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

Box Material Gauge

Width	Height (in.)	Gauge Steel
20"	32, 38, 44	#16
	56, 62, 68	

Trim Material Gauge

Width	Height (in.)	Gauge Steel
20"	32, 38, 44	#14
	56, 62, 68	

Lighting Panelboards

Main Lug or Main Breaker

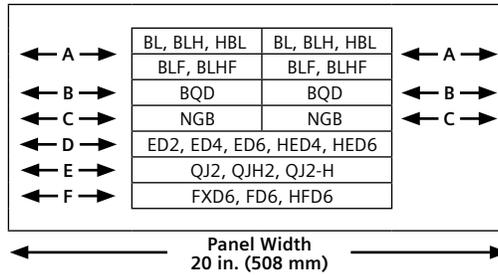
Maximum Ampere Rating	Main Breaker Type	Maximum Number of Poles	Box Height Inches (mm)	Connections Suitable for Cu or Al
100	BL, BLH HBL BQD	18 30 42	32 (813) 38 (965) 44 (1118)	#8-#6 AWG Cu or Al #8-6 AWG Cu or #8-4 AWG Al #8-#1 AWG Cu or #6-#1/0 AWG Al
125	NGB		32 (813) 38 (965) 44 (1118)	15-30 amp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

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

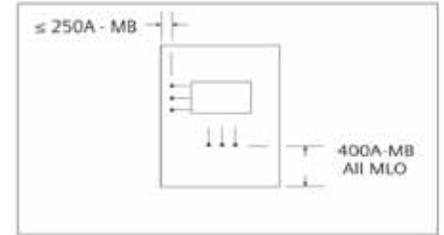
Reference Letter	Panel Width 20"	Panel Width 24" Optional
A	6.375 (162)	8.375 (213)
B	5.500 (140)	7.500 (191)
C	5.000 (127)	7.000 (178)
D ^①	6.125 (156)	8.125 (206)
E ^①	6.500 (165)	8.500 (216)
F ^①	5.250 (133)	7.250 (184)

① Subfeed mounting limit 1 per panel

Fig. P1-1



Main Device Gutter

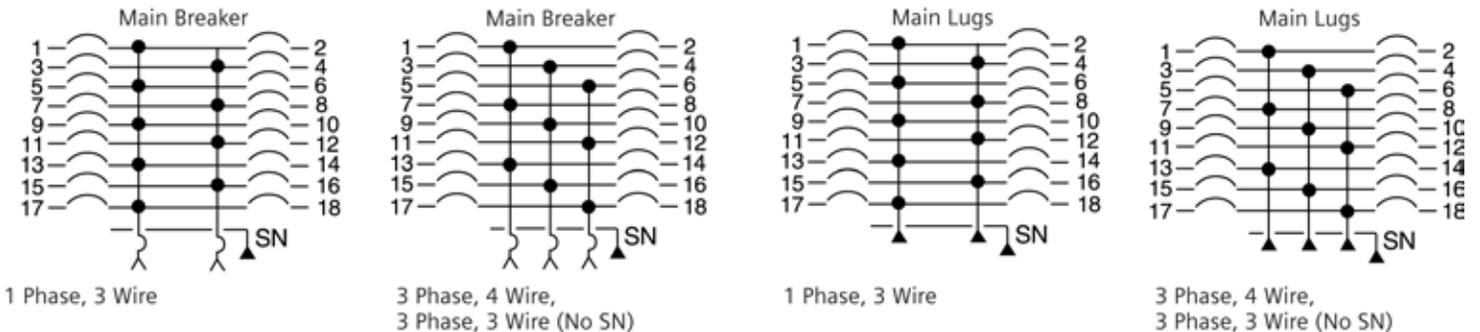


Main Breaker Gutter Dimensions Inches (mm)

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

① JD frame mounted vertically.

Typical Panelboard Wiring Diagrams



Breaker Mounting Kit – Main or Subfeed w/o Breaker

Amp Rating	Breaker Frames	Service	Catalog Number
100	BL, BLH, HBL	1 Phase	MBKBL1
		3 Phase	MBKBL3
	BQD	3 Phase	MBKBC3
125	NGB	1 Phase	MBKNB1
		3 Phase	MBKNB3
	ED2, ED4, ED6, HED4, HED6	1 Phase	MBKED1
		3 Phase	MBKED3
225	QJ2, QJH2, QJ2-H	1 Phase	MBKQJ1
		3 Phase	MBKQJ3
250	FXD6, FD6, HFD	1 Phase	MBKFD1
		3 Phase	MBKFD3
400 ^①	JD2, JD6, JXD6, HJD6, HJXD6	1 Phase	MBKJD1
		3 Phase	MBKJD3

200% Neutral Lug Kits – 250A

Number of Circuits	Description	Catalog Number
18	2 Branch Neutral Strips, 2 Main Neutral Lug, Hardware	2NLK18
30	2 Branch Neutral Strips, 2 Main Neutral Lug, Hardware	2NLK30
42	2 Branch Neutral Strips, 2 Main Neutral Lug, Hardware	2NLK42

200% Neutral Lug Kits – 400A

Number of Circuits	Description	Catalog Number
18	2 Branch Neutral Strips, 4 Main Neutral Lug, Hardware	42NLK18
30	2 Branch Neutral Strips, 4 Main Neutral Lug, Hardware	42NLK30
42	2 Branch Neutral Strips, 4 Main Neutral Lug, Hardware	42NLK42

Lug Kits – Main or Feed-thru

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

Copper Neutral Lug Kits – 250A and 400A

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

Branch Circuit Breakers

Max. Amp Rating	Breaker Type	No. of Poles	Amp Rating	Maximum Interrupting Rating (kA)							Load Connectors
				Volts – AC						DC	
				120	120/240	240	277	480	600	250	
100	BL	1	15 - 70	10	–	–	–	–	–	–	15-20A #14-#10 AWG Cu #12-#10 AWG Al 25-35A #8-#6 AWG Cu #8-#6 AWG Al 40-50A #8-#6 AWG Cu #8-#4 AWG Al 55-70A #8-#4 AWG Cu #8-#2 AWG Al 80-100A #4-#1/0 AWG Cu #2-#1/0 AWG Al
		2	15 - 100	–	10	–	–	–	–	–	
		3	15 - 100	–	–	10	–	–	–	–	
	BL, HD	1	15 - 30	10	–	–	–	–	–	–	
		2	15 - 30	–	10	–	–	–	–	–	
	BLR	2	15 - 100	–	–	10	–	–	–	–	
	BLE	1	15 - 30	10	–	–	–	–	–	–	
		2	15 - 60	–	22	–	–	–	–	–	
	BLEH	1	15 - 30	22	–	–	–	–	–	–	
		2	15 - 60	–	10	–	–	–	–	–	
	BLF	1	15 - 30	10	–	–	–	–	–	–	
		2	15 - 60	–	10	–	–	–	–	–	
	BLHF	1	15 - 30	22	–	–	–	–	–	–	
		3	15 - 60	–	22	–	–	–	–	–	
	BGL ^②	2	15 - 30	10	–	–	–	–	–	–	
		3	15 - 30	–	10	–	–	–	–	–	
	BAF	1	15 - 20	10	–	–	–	–	–	–	
BAFH	1	15 - 20	22	–	–	–	–	–	–		
BLH	1	15 - 70	–	22	–	–	–	–	–		
	2	15 - 100	–	22	–	–	–	–	–		
	3	15 - 100	–	–	22	–	–	–	–		
HBL	1	15 - 70	–	65	–	–	–	–	–		
	2	15 - 100	–	65	–	–	–	–	–		
	3	15 - 100	–	–	65	–	–	–	–		
BQD	1		–	65	–	14	–	–	14		
	2	15 - 100	–	65	–	–	14	–	14		
	3		–	–	65	–	–	14	14		
125	NGB ^③	1		100	–	–	25	–	–	14	
		2	15 - 125	–	100	100	–	25	–	–	
		3		–	100	100	–	25	–	–	

① Main Only

② Two pole breaker is one phase and neutral. Three pole is two phase and neutral.

③ P1 panel with NGB branch devices will not accept BL or BQD frames in the same panel as branch devices.

NOTE: BL, HBL, BLH and BQD breakers are mounted in common mountings in 3" or (6) pole increments.

Modifications and Dimensions

Panel Options, Enclosures

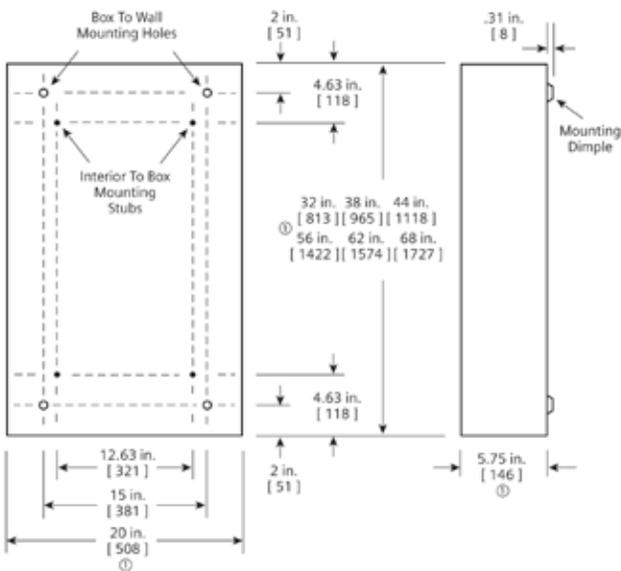
- Extra gutter to sides or ends of the can
- 24" wide boxes
- Hinged trims
- Door-in-door trims
- Screw to the box trims
- Trim mounted devices (Devices mounted and wired to the trim should also have hinged trim specified.)
 - Pilot lights
 - Toggle switches
 - Push buttons

- Painted boxes
- Custom colors
- Increase gauge trims and boxes
- Stainless steel trims and boxes, Type 1
- Aluminum trims and boxes, Type 1
- NEMA 3R enclosures
- NEMA 3R/12 enclosures
- NEMA 4 enclosures
- NEMA 4X enclosures

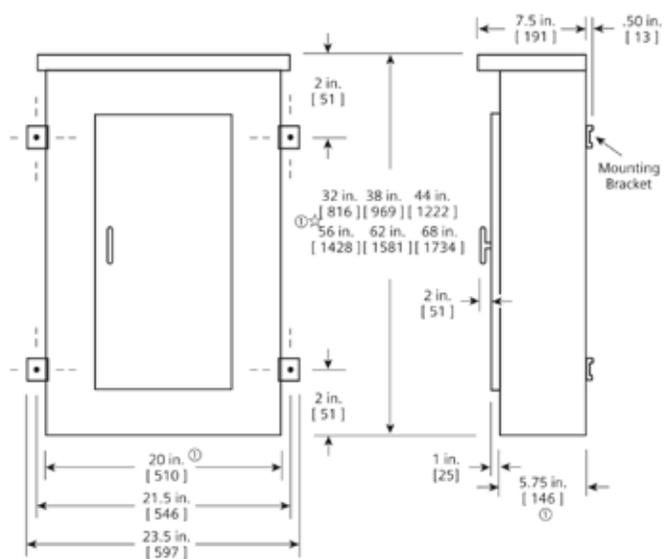
- Special keyed locks
 - TEY
 - TEU1
 - Cat 60
 - LL803
 - LL806
 - Yale
- Meters
(Contact application engineering for space requirements.)
- Panel skirts
- Gaskets between trim and box

Type P1 Dimensions

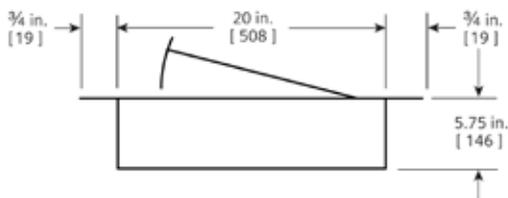
Type 1 Box (Box is Symmetrical)



Type 3R and 3R/12 Box



Flush Mounting



① Dimensions are interior of the box. Add 5/8" to width for absolute dimension. Add 1/8" to height for absolute dimension. Dimensions shown in inches and millimeters [].

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