

Lighting & Heat Tracing Panels

EPL (Div. 1 & 2) D2L (Div. 2) Power Panels

EXD (Div. 1 & 2) D2D (Div. 2)

COOPER Crouse-Hinds



PowerPlus™ Series
Panelboards provide both
premium factory-sealed and
value non-factory-sealed
solutions for the protection
and distribution of lighting,
power, and heat tracing
circuits.

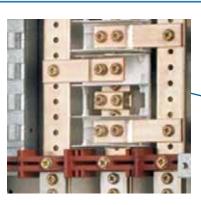
This panel solution is designed, engineered, and manufactured to be the industry's safest and most dependable panelboard for hazardous area locations.



This corrosion-resistant Type 4X breather and drain comes standard with all PowerPlus panelboards. This permits all models to maintain their Type 4 (Type 4X with suffix S752) rating while utilizing a breather/drain solution to drain internal condensation while protecting against ingress of rain and hose water.

PowerPlus D2L and EPL panels are available with GFI and/or EPD breakers. This 21-position electrical test circuit allows for testing of GFI, EPD, or a combination of both in one panel. EPLDN panels are available with up to 42 GFI or EPD circuits with 225 amp main breaker.

PowerPlus panels come standard with a high-quality silver-plated copper buss system. This provides highefficiency current flow between the main feed and branch breakers.





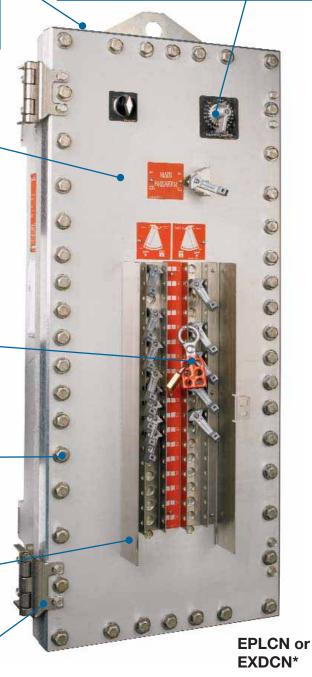
Each branch and main breaker handle is provided with lockout/tagout capability, which complies with OSHA lockout/tagout requirements for safety. This allows for locking in the ON or OFF position for standard maintenance checks.

Spring-loaded, quick-release, captive stainless steel cover bolts come standard. This design prevents damage to the flat joint — flame path when opening and closing the cover while providing visual identification of bolt engagement.



PowerPlus panels are available with an optional hinged stainless steel ice/dust shield. This ice shield solution prevents ice and snow build-up on breaker handles to allow for proper handle function in cold/wet climate applications.

Stainless steel hinges are engineered to provide maximum stability and allow the cover to swing fully open. This avoids misalignment of cover to the body of the enclosure and prevents the cover from obstructing interior access.



*Note: D2D / EXD panels are not available with GFI or EPD circuit breakers or electrical test circuit as standard. Please contact factory if required.



Integrated steel lifting eye is mounted on the top side of each PowerPlus panel. This provides a stable lifting position to ensure ease of mounting during the installation process.

PowerPlus cast enclosures are manufactured with an external flange design. This design allows for a wide unobstructed cover opening and provides a completely accessible interior for ease of maintenance and wiring.

Superior self-aligning breaker operators are designed for both field and factory installation. This patent-pending design guarantees proper handle alignment when closing the cover.†

All panels with terminal housings are factory-sealed†† and fully wired for maximum available circuits. This allows PowerPlus models the ability to have additional breakers field-installed while maintaining their factory seal.





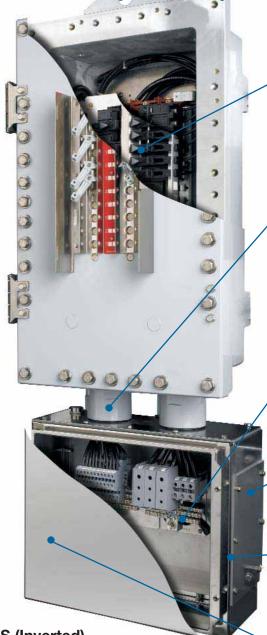
All terminal blocks come fully wired with each contact numbered for easy connecting of branch entries.

Heavy gauge 316L stainless steel terminal housings are supplied with three removable gland plates to be used with Myers® Hubs. This design allows for the flexibility of factory- or field-drilled openings for hubs.

PowerPlus panelboards offer an industrial grade 316L stainless steel terminal housing as standard. This design offers an increased internal volume with a removable front cover for easy access during field installation and maintenance. A cast aluminum terminal housing is standard on EPL and EXD panels and available on D2L and D2D panels.



Stainless steel terminal housings offer a high-integrity gasket, providing a watertight seal to meet enclosure Type 4/CSA ENC. 4/IP65 requirements. This provides superior protection of enclosed wiring against water and corrosion. Cast aluminum enclosures are also gasketed, providing a NEMA 4 watertight seal.



D2LBS (Inverted) or D2DBS (Inverted)

†Not available in Size F offering. Spring aligning forks are standard on Size F panels.

t†EPL*A and EXD*A conduit entries 2" or larger in Class I, Division 1 must be sealed within 18" of enclosure. All alternate feed entries to breaker housing (suffix A) must have an external seal within 18" of enclosure.

- **Premium Solution:** PowerPlus **factory-sealed** panelboards are premium panelboards that provide maximum circuit flexibility with labor savings during installation, operation, and maintenance, and are accommodating for future changes in the field (order with either "S" or "A" in base part number). Panels are pre-wired to maximum circuit capacity, allowing for easy and safe replacement or installation of components in the field, while maintaining factory-sealed integrity.
- **Value Solution:** PowerPlus **non-factory-sealed** panelboards are value panelboards that offer maximum circuit flexibility and many of the same features and benefits of the PowerPlus premium line. This value solution is provided without terminal housing and factory wiring of circuits (order with "N" in base part number). The non-factory-sealed solution reduces initial panelboard material costs and requires field wiring to circuit breakers and external seals to be field-installed during installation.

APPLICATIONS

PowerPlus panelboards are used:

- in areas made hazardous by the continuous or abnormal presence of flammable gases, vapors, and combustible dusts
- in areas subject to weather, dampness, and corrosion
- for branch power distribution and circuit protection to motors, valves, pumps, lighting, heat tracing, receptacles, etc.
- for indoor and outdoor applications in petroleum refineries, chemical and petrochemical plants, and other process industry facilities where similar hazards exist
- to accommodate up to 100 amp branch loads (only 3 circuits), balance is up to 50 amps

CERTIFICATIONS & COMPLIANCES (EXD/EPL)

EXD & EPL Series (Division 1):

NEC/CEC:

Class I, Division 1 & 2, Groups B†, C, D

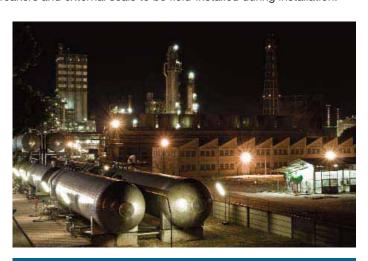
Class I, Zone 1 & 2, IIB + $H_2\dagger$

Class II, Division 1, Groups E, F, G

Class II, Division 2, Groups F, G

Class III

- NEMA/EEMAC: 3, 4, 4X*, 7B†CD, 9EFG, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 877, 1203
- cUL (to CSA Standard C22 Nos. 29 & 30)
- IP65



CERTIFICATIONS & COMPLIANCES (D2D/D2L)

D2D & D2L Series (Division 2):

NEC/CEC:

Class I, Division 2, Groups B†, C, D

Class I, Zone 2, IIB + H₂†

Class II, Division 2, Groups F, G

Class III

- NEMA/EEMAC: 3, 4, 4X††, 7B†, C, D, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 877, 1077
- cUL (to CSA Standard C22.2 Nos. 29 & 30)
- IP65

†Group B and IIB + H₂ is standard on all PowerPlus panels, but requires special brackets to be installed on breakers to ensure long-term operability of circuit breakers. To order with brackets installed at factory, add suffix -GB. For field installable kit, order EPL-GB-KIT for D2L/EPL or EXD-GB-KIT for D2D/EXD Sizes B, C, and D separately. ††NEMA 4X rating is available when ordered with suffix S752 or S753.



ELECTRICAL RATINGS (D2D/EXD Series)

Branch Breakers Trip Ratings:

Panel Size	Voltage	Phase/Wire	Main Breaker Amperage	Branch Breaker
В	480Y/277	3P 4W	up to 100	G-frame
	480∆†††	3P 3W	up to 100	G-frame
С	480Y/277	3P 4W	up to 100	G-frame
	480∆†††	3P 3W	up to 100	G-frame
D	480Y/277	3P 4W	up to 225	G-frame
	480∆†††	3P 3W	up to 225	G-frame
F	480Y/277, 480Δ, or 600Δ†††	3P 3W or 3P 4W	up to 225	F-frame

Panel Sizes B, C, and D (GHB Series Cutler-Hammer™)

- 1-, 2-, & 3-pole: GHB 480/277Y (standard offering)
- 2- & 3-pole: GDB 480\(Delta\) (requires suffix -GDB)
- 15, 20, 25, 30, 35, 40, 45, 50 amp (avail. in all breaker spaces in panel) 60, 70, 80, 90, 100 amp (only 3 breaker spaces avail.);;;;;;
- Ambient compensated breakers are optional to +50°C (suffix V)

Panel Size F (F-frame Breaker: EHD Cutler-Hammer™ standard)

- 15, 20, 25, 30, 35, 40, 45, 50, 60, 70 amp (avail. in all breaker spaces in panel) 80, 90, 100 amp (only 3 breaker spaces avail.)
- Breaker types available † † † (refer to Options on page 6 to specify breaker type)
 - FDB: 1-, 2-, and 3-pole 600V
 - FD: 1-, 2-, and 3-pole 600V
 - HFD: 1-, 2-, and 3-pole 600V
 - EHD: 1-, 2-, and 3-pole 480V

Main Breaker Trip Ratings:

- 2- and 3-pole
- Size B: 15 to 100 amps
- Size C, D, and F: 15 to 225 amps

Main Lugs:

- Size B, C, and F: 225 amps
- Size D: not available; main breaker only

Ampere Interrupting Capacity:

- All size panels are certified to 10kAlC
- Breaker AIC Ratings:
 - GHB Breaker: 14kAIC at 480Y/277 - EHD Breaker: 14kAIC at 480V

Breaker types optional with Sizes B, C, and D panel only:

- GDB Breaker: 14kAIC at 480V

Breaker types optional with Size F panel only:

- FDB Breaker: 14kAIC at 480V and 600V
- FD Breaker: 18kAIC at 600V and 35kAIC at 480V
- HFD Breaker: 25kAIC at 600V and 65kAIC at 480V

ELECTRICAL RATINGS (D2L/EPL Series)

Branch Breakers (120/240VAC Quicklag® Bolt-on) Trip Ratings:

- 1-, 2-, and 3-pole
- 10, 15, 20, 25, 30, 35, 40, 45, 50 amp (available in all breaker spaces in panel) 55, 60, 70, 80, 90, 100 amp (only 3 breaker spaces available for 55 to 100 amp branch breakers)
- GFI Type, 1- and 2-pole (5mA sensitivity) 15, 20, 25, 30, 40 (50 amp - available 2-pole only)
- EPD Type, 1- and 2-pole (30mA sensitivity) 15, 20, 25, 30, 40 (50 amp - available 2-pole only)
- HID Type, 1- and 2-pole, 15, 20, 25, 30, 35, 40, 50, 60
- Available with GFI, EPD, or a combination of both in one panel with a 21-position electrical test circuit
- Ambient compensated breakers available to +50°C

Main Breaker Trip Ratings:

- 2- or 3-pole
- Size B: 10 to 100 amps
- Size C and D: 10 to 225 amps

Main Lugs:

Size B, C, and D: 225 amp



 $[\]uparrow\uparrow\uparrow\uparrow$ For 480Δ 3P 3W system or for 600VAC, a suffix is required. See page 6 for suffix options. For 480Δ system, please contact factory. Note: for single-pole 480Δ , GHB breakers will be furnished for Sizes B, C, and D.

 $[\]dagger\dagger\dagger\dagger F \text{-frame breakers are only available in Size F panel with up to a maximum of 30 circuit spaces.}$

^{††††2-}pole GDB breakers are only available up to 50 Amps.

STANDARD MATERIALS AND FINISHES

- Circuit breaker enclosure body and cover copper-free aluminum
- Terminal housing Type 316L stainless steel ("S") or copperfree aluminum ("A")

Incoming Lug Terminals	Panel Size B,C,D	D2D/EXD Size F
Line (A,B,C) wire range	4-4/0	6-350MCM
Branch circuit (1,3,5) wire range	10-0	10-0
Branch circuit (balance) wire range	24-8	18-4
Neutral line wire range	6-350MCM	6-250MCM
Neutral circuit wire range	14-4	14-1/0
Ground line wire range	6-350MCM	6-250MCM
Ground circuit wire range	14-4	14-1/0

- Gasket neoprene (cast aluminum enclosures), foam-in-place (stainless steel enclosure)
- Operating handles copper-free aluminum
- Operating shafts and bushings, cover bolts, washers, hinges, breather/drain, retractile springs - stainless steel
- Circuit breaker operators D2D/EXD Size F: copper-free aluminum; all other types: non-metallic
- Lifting bracket electrogalvanized cold rolled steel
- Chassis silver-plated copper
- Breather cap Delrin® non-metallic material
- Neutral and ground bar tin-plated aluminum

OPTIONS

To add the following features to the panelboard, add a dash and then the suffix to the catalog number. Multiple suffixes should be added in alpha-numeric order.

Epoxy powder coat finish, external S752 Epoxy powder coat finish, internal and external S753 Recess-head plugs on all conduit openings RP Stainless steel breaker operator cover (ice shield) HG Group B Kit factory installed GB GFI breakers* GB EPD breakers* EPD breakers* HID breakers* HD breakers* HDB 600V breakers** FDB 600V breakers** LDB 600V breakers
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A standard panelboard has conduit openings for power and branch circuits on top.

- To order a panelboard with main power feed from the bottom of breaker housing, and branch
- To order an inverted panelboard with all conduit openings for power and branch circuits on the bottom (Inverted), add
- To order an inverted panelboard with main power feed on top and bottom (Alternate Inverted), add-A-I***

ACCESSORIES

Field-installable gland plates with factory-provided aluminum Myers Hubs for the D2L and D2D stainless steel terminal housing (one 3-inch hub and 12 branch entry hubs - size dependent upon suffix, each kit includes 3 gland plates, 1 for the top or bottom and 1 for each side):

	D2L	D2D
¾" branch entry hub	D2L HUB2 KIT	D2D HUB2 KIT
1" branch entry hub	D2L HUB3 KIT	D2D HUB3 KIT
1 ½" branch entry hub	D2L HUB5 KIT	D2D HUB5 KIT
Replacement gland plate (no hubs)	D2L HUB0 KIT	D2D HUB0 KIT

Circuit Breaker Operator Assemblies

Operator Assemblies	Part Number
D2L/EPL 1-pole or 3-pole breakers	EPL HDL13
D2L/EPL 2-pole breakers	EPL HDL2
D2D/EXD All Breakers Panel Sizes B, C, D	EXD HDL 123
D2D/EXD All Breakers Panel Size F	EXD K1

Replacement cover plugs for both D2L/EPL and D2D/EXD for unused circuit breaker positions (qty. 5):

Plug Kits	Part Number
D2L/EPL Sizes B, C, D	EPL OP PLG
D2D/EXD Sizes B, C, D	EXD OP PLG
D2D/EXD Size F	EXD K2

Kit for Group B, standard panels less GB suffix are good for Group B, but it is required to install brackets on breakers. To order brackets factory-installed, add suffix -GB. For field installable kit, order:

D2L / EPL Kit: EPL GB KIT D2D / EXD Sizes B, C, D Kit: EXD GB KIT

D2L/EPL stainless steel breaker operator cover to protect operators from ice build-up for all D2L/EPL PowerPlus panels. For D2D/EXD styles, please contact factory.

- Kit for Size B panel: EPL-HG24-KIT - Kit for Size C and D panel: EPL-HG42-KIT

Space heater kits:

D2L / EPL: EPL R22 KIT D2D / EXD: EXD R44 KIT

Terminal housing mounting plate kit to adapt depth of terminal housing to same depth as breaker enclosure: EPLA-MTG-KIT****

Panel Types / Sizes	Part Number	Terminal Housing
D2L/EPL Sizes B, C, D	EPLA-MTG-KIT	Aluminum
D2D/EXD Sizes B, C, D	EXDA-MTG-KIT	Aluminum
D2L Sizes B, C, D	D2LS-MTG-KIT	Stainless
D2D Sizes B, C, D	D2DS-MTG-KIT	Stainless

^{*}Available with D2L and EPL panels only. For D2D / EXD, please contact factory.

Delrin® is a registered trademark of DuPont.

^{**}Available with D2D and EXD Size F panels only.

^{***}Not available in D2L/EPL Size D panels. D2D/EXD Sizes C and D are only available with up to 36 circuits.

^{*****}The weight of the panel is sufficiently supported by mounting of breaker enclosure.

^{******}Available in D2D and EXD Sizes B, C, and D only.



Table A. Panel Capacity - D2L / EPL

Maximum Number of Breaker Spaces:

D2L / EPL Panels

	Maximum Numb	er of Branch Circuit		Available with		
Panel Size	With Main Lug Only	With Mai	n Breaker	Available Main Breaker Ampacity	GFI, EPD Branch Protection	
	With Main Lug Only	Two-pole	Three-pole]		
В	24	22	21	Up to 100‡	Yes	
C#		40	39	Up to 100‡	Yes	
O#	42	36	36	110 to 225##	Yes	
D	42	42	42	Up to 225##	Yes	

[#]All Size B and Size C panels with main breaker rated up to 100 amps use a back-fed branch breaker. All Size D and Size C panels with main breaker rated from 110 amps to 225 amps have a dedicated location for main breaker. Size C ordered with suffix 2M00 or 3M00 are provided with 36 branch circuits for maximum breaker ampacity.

Table B. Panel Capacity - D2D / EXD

Maximum Number of Breaker Spaces:

D2D / EXD Panels

	Maximum Numb	per of Branch Circuit		Available with GFI, EPD		
Panel Size	With Main Lug Only	With Main Breaker				Available Main Breaker Ampacity
	With Main Eug Only	Two-pole	Three-pole		Branch Protection‡	
В	24	22	21	Up to 100‡	No	
С	42	40	39	Up to 100‡	No	
D	N/A	42	42	Up to 225##	No	
F	30	30	30	Up to 225##	No	

Table C. To Size Panels with GFI or EPD Branch Breakers

Maximum Number of GFI or EPD Breakers			Forb fortune and discould be used.		0.1		
Panel Size	Single-pole	Two-pole	 Each factory-sealed panel is equipped with 42 load wires for GFI/EPD breakers and any combination with standard branch breakers. Determine the total number of load wires required to complete your panel. You may not exceed 42 load wires. 				
With Main Lug					Load Wires		
or Main Breaker					Required		
			Single-pole breaker	=	1		
			Single-pole GFI (or EPD) breaker	=	2		
В	21	12	Two-pole breaker	=	2		
		(10 with 3-pole MCB,	Two-pole GFI (or EPD) breaker	=	3		
		11 with 2-pole MCB)	Three-pole breaker	=	3		
					m Total: <u>42</u> load wires factory-sealed)		
С	21	14	EPLDN Panels	Maximum Total: 82 load wires (non-factory-sealed)			
D	EPLDN only -	can go up to 42 GFI or I	EPD circuits. EPLDN will accommod				

‡Main breakers are chassis mounted and back fed.

 $[\]ensuremath{\mbox{\#\#}}$ Main breakers are mounted external to chassis.

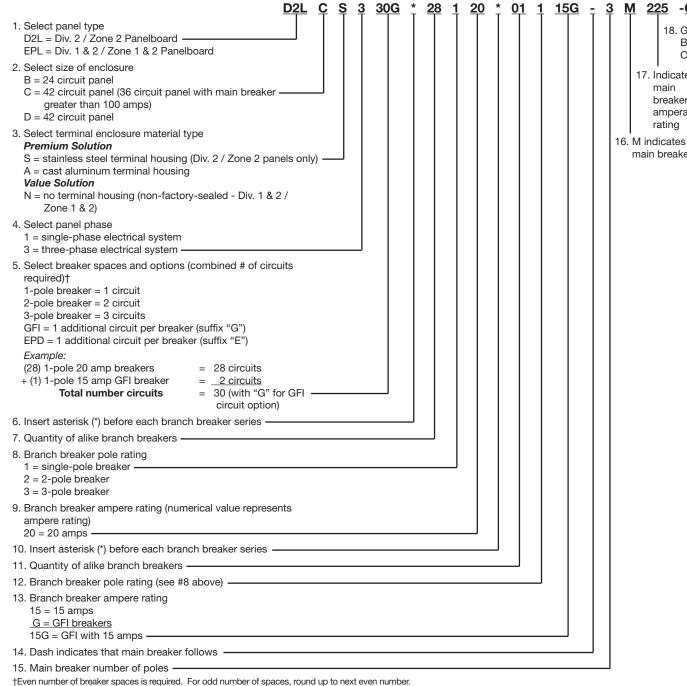
^{‡‡}GFI, EPD, for D2D / EXD are not standard options. If required, please contact factory.

Lighting Panelboard Catalog Number Example - D2L and EPL

Example: A Class I, Division 2 / Zone 2, Group B panel with:

- 240VAC Lighting Panelboard
- (28) single-pole 20 amp branch breakers
- (1) single-pole 15 amp branch GFI breaker
- 225 amp 3-pole main circuit breaker

Example would be ordered as:





18. Group

B

17. Indicates

main

rating

main breaker

breaker

amperage

Option



Power Panelboard Catalog Number Example - D2D and EXD

Example: A Class I, Division 2 / Zone 2, Group B panel with:

- 480ΔVAC Power Panelboard with 3 Phase 3 Wire
- (42) single-pole 20 amp branch breakers
- 225 amp 3-pole main circuit breaker

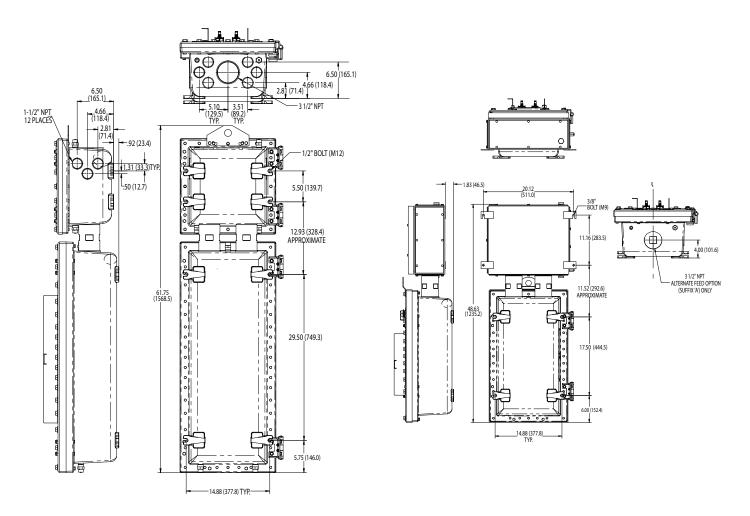
Example would be ordered as:



<u>D</u>	<u> </u>	3 42 V	* 42	<u> 20 - </u>	<u>3</u> ₩	<u>225</u>	- <u>GB</u>	-GDB
Select panel type D2D - Division 2 / Zone 2 Panel ———— EXD - Division 1 / Zone 1 Panel Output Description:								
2. Select size of enclosure (refer to Electrical Ratings Chart on page 5) B = 24 circuit panel C = 36 circuit panel D = 42 circuit panel F = 30 circuit panel								
3. Select terminal enclosure material type Premium Solution S = stainless steel terminal housing (Sizes B, C, D only) A = cast aluminum terminal housing Value Solution N = no terminal housing included (non-factory-sealed)								
4. Select panel phase 1 = single-phase electrical system 3 = three-phase electrical system		$\rfloor \parallel \parallel$						
5. Select breaker spaces (combined # of circuits required)† Example: Single-pole breaker = 1 circuit 2-pole breaker = 2 circuits 3-pole breaker = 3 circuits								
6. Select breaker options V = ambient compensated ————————————————————————————————————								
7. Asterisk (*) denotes breaker characteristics follow——————————————————————————————————			_ _					
Quantity of alike branch breakers								
9. Branch breaker pole rating 1 = single-pole breaker 2 = 2-pole breaker 3 = 3-pole breaker								
Branch breaker ampere rating (numerical value represents ampere rating)								
15 = 15 Amps								
11. Dash indicates that main breaker follows —								
12. Main breaker number of poles —					_			
13. M indicates main breaker								
14. Indicates main breaker amperage rating Size B: 15 to 100 amps Sizes C, D, and F: 15 to 225 amp								
15. Options†† GB = Group B Kit factory-installed GDB = GDB frame breakers with 480∆ 3P 3W System †Even number of breaker spaces is required. For odd number of spaces, round up to	o nevt even numbo	er						
ttSee all available options on page 6.	C HOAL GVEITHUITIDE	o.						9

††See all available options on page 6.

Dimensions - D2L and EPL



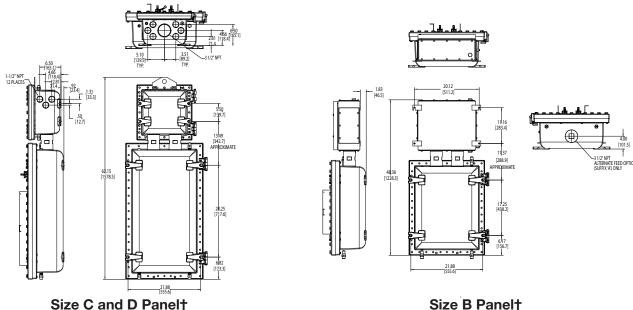
Size C and D Panel* (with cast terminal housing)

Size B Panel* (with stainless steel terminal housing)

^{*}Stainless steel terminal housing for Sizes B, C, D, and F are the same. Cast aluminum terminal housing for Sizes B, C, and D are the same.

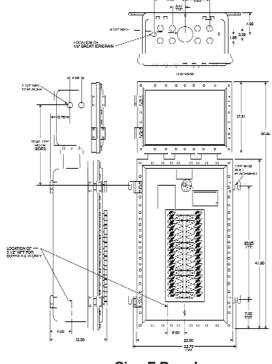


Dimensions - D2D and EXD



Size C and D Panel† (with cast aluminum terminal housing)

Size B Panel† (with stainless steel terminal housing)



Size F Panel

†Stainless steel and cast aluminum terminal housing for sizes B, C 7 D panels have same dimensions.

For more information:

If further assistance is required, please contact an authorized Cooper Crouse-Hinds Distributor, Sales Office, or Customer Service Department.

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