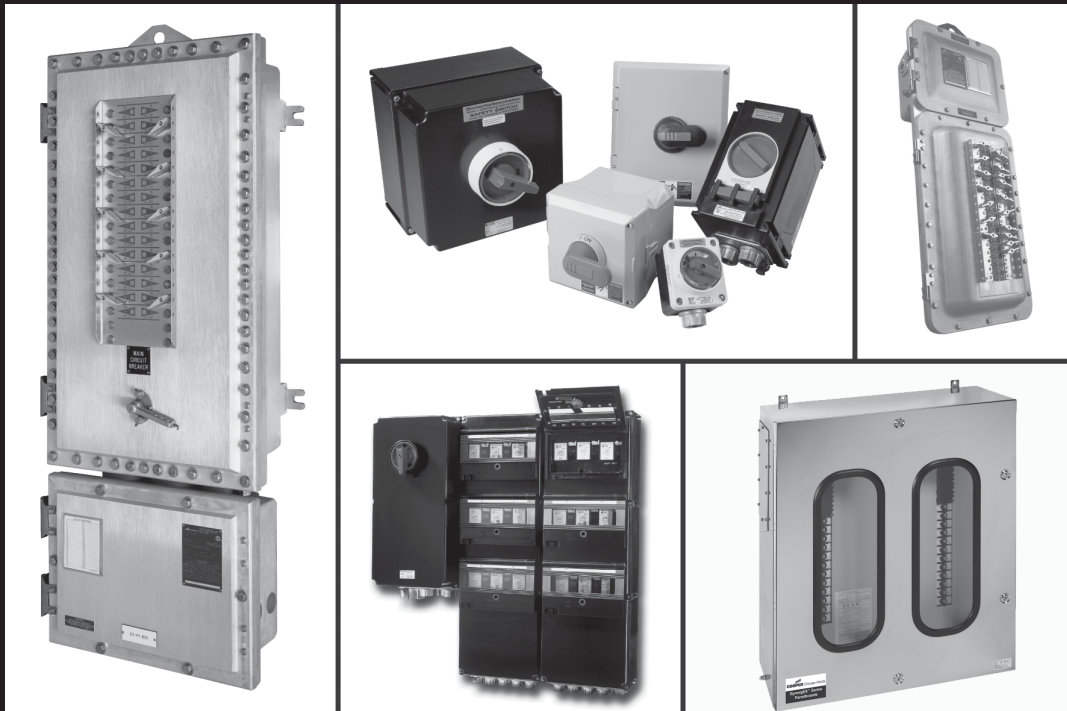


Apparatus

Section A

Innovative, intelligent NEC and IEC solutions safely and efficiently control power and protect circuits in explosive, wet, and corrosive environments worldwide.



New Products in the Apparatus Product Line

- SynergEX Panelboards
- EID Disconnect Assembly (Fused)
- XDT Explosionproof Dry-Type Transformers

Section

1A
2A
4A

Notable changes to the Apparatus section of this catalog

- Surge Protection Devices (previously section 4A) has been removed. For information on surge protection, please visit Eaton's Crouse-Hinds MTL Instruments at www.mtl-inst.com
- New Section 4A for transformers

A Apparatus

Table of Contents

Section A of the Eaton's Crouse-Hinds catalog contains the following product groupings:

Section 1A

Panelboards

(for use in hazardous and non-hazardous areas)

For central control and protection of a large number of feeder or branch circuits and for housing of circuit breakers.

D2L	XLPB
D2PB	EXD
D2D	GUSC
EPL	D2Z
LP	N2PB
SPB	NLP

Section 2A

Switches

(for use in hazardous and non-hazardous areas)

Switches and enclosures for disconnecting motor, lighting and other circuits.

EDS, EDSC	FSPC	NST
EFD, EFDC	GUSC	NRS
FLS	WST	6810 Series
EID	GHG	7810 Series
	EBM	N2RS

Section 3A

Instrument Housings

(for use in hazardous areas)

Housings for a variety of types and makes of meters and instruments, thermostats, heaters and clocks.

HRC	ETW
TCH	ETC
EXH	ETR
XC	D2TW

Section 4A

Transformers

Provide safe and efficient electric power distribution in the most extreme harsh and hazardous locations.

XDT

A

Description	Page No.
General Information	see page 626
Application/Selection	see page 627
Wiring Diagrams	see page 628
Hazardous Location Panelboards	
Division 1 and 2	
PowerPlus™ EXD	see page 641
PowerPlus™ EPL	see page 634
SynergEX SPB	see pages 650–653
Exactra™ LP	see page 630
GUSC	see pages 667–668
Division 2	
PowerPlus™ D2D	see page 641
PowerPlus™ D2L	see page 634
Exactra™ LP	see page 630
D2PB	see page 663
N2PB	see pages 669–671
GUSC	see pages 667–668
D2Z	see page 654
Ordinary Location	
XLPB	see page 672
NLP Series	see page 675

1A Circuit Breaker Panelboards

General Information

Applications:

Circuit breaker panelboards are used in hazardous and non-hazardous areas (as shown in the individual listings):

- To provide, in one compact unit, a centrally controlled switching system for a large number of feeder or branch circuits
- For controlling lighting, heating, appliance, heat tracing, motor and similar circuits
- In locations where rough usage, moisture, dust, dirt and corrosion are a problem
- To house thermal-magnetic circuit breakers that provide disconnect means, short circuit protection and thermal time delay overload protection

Features:

Panelboards:

- All main and branch circuit wire lugs are solderless and readily accessible for fast, easy installation
- Are factory wired from main terminal blocks or main bus to line side of branch circuit breakers
- With circuit breakers in factory sealed housings (LP1, EXD and EPL), are also factory wired from the load side of branch circuit breakers to readily accessible terminal blocks
- With circuit breakers grouped in one enclosure (LP2, D2D, D2L, D2Z and D2PB factory sealed), branch circuit wires are attached directly to circuit breaker load terminals

Circuit breakers (thermal magnetic):

- Are trip-free of the handles and cannot be held closed under short circuit or overload conditions
- Four breaker types are used in panelboards manufactured by Eaton's Crouse-Hinds. They are as follows:
- Quicklag® – used in LP, D2PB, EPL and D2L panelboards; 10,000 ampere symmetrical interrupting capacity

Ratings

Fed. Spec.

Single and two-pole, 120 / 240 VAC	W-C-375a, Class 1a
Two and three-pole, 240 VAC	W-C-375a, Class 1b

- EHD/FDB frame – used in EXD and D2D panelboards; 14,000 ampere symmetrical interrupting capacity - 480 VAC

Ratings

Fed. Spec.

Single-pole, 277 VAC or 125 VDC	W-C-375a, Class 2a
Two and three-pole 480 VAC or 250 VDC	N/A

Wiring Systems:

- See pages 628 and 629 for wiring diagrams. These are the standard systems used for single and three-phase panelboards having single, two and three-pole circuit breakers
- Standard panelboards are listed with all circuit breakers having the same number of poles and wired for one of these systems
- To meet the requirements of a specific installation, panelboards can be assembled with a combination of single, two and three-pole breakers. To accomplish this, the three individual wiring systems must have the same main service as, for example, 3-phase, 4-wire, solid neutral.

Panelboard Type	Applicable Wiring Systems
D2PB	3, 4, 5, 8, 11, 12

- Diagrams show only four, six or eight circuits; are intended to show only the phase connections of each circuit breaker and do not necessarily show their physical location in a panelboard.

Panelboards are available with the number of circuits indicated in the listings.

Standard Materials, Finishes, Options and Compliances:

- See individual listing pages

Quick Selector Chart

Quick Selector Chart

Panelboard	NEC & NEMA Certifications and Compliances	Factory Sealed	Number Circuits Max.	Breaker Frame Size	Multi-Pole Voltage Max.	Trip Rating Amps Max.	Circuit Interrupting Amps Max.	Step Down Transformer Available
D2D	Cl. I, Div. 2, Groups B, C, D NEMA: 3, 4, 7BCD, 12	Yes	42	Various	600VAC 250VDC	100	10,000	Yes
D2L	Cl. I, Div. 2, Groups B, C, D NEMA: 3, 4, 7BCD, 12	Yes	42	Quicklag®	240VAC 125VDC	100	10,000	Yes
D2PB	Cl. I, Div. 2, Groups C, D NEMA: 3, 7CD (Div. 2), 12	Yes	24	Quicklag®	240VAC	30	10,000	Yes
D2Z	Cl. I, Zone 1, Div. 2, Groups A, B, C, D NEMA: 3, 4X, 7ABCD (Div. 2), 12 Corrosion Resistant, Non-Metallic	Yes	54	CEAG	480VAC	180	10,000	No
EPL	Cl. I, Div. 1 & 2, Groups B, C, D Cl. II, Div. 1, Groups E, F, G Cl. II, Div. 2, Groups F, G Cl. III NEMA: 3, 4, 7BCD, 9EFG, 12	Yes	42	Quicklag®	240VAC 125VDC	100	10,000	No
EXD	Cl. I, Div. 1 & 2, Groups B, C, D Cl. II, Div. 1, Groups E, F, G Cl. II, Div. 2, Groups F, G Cl. III NEMA: 3, 4, 7BCD, 9EFG, 12	Yes	42	Various	600VAC 250VDC	100	10,000	No
GUSC	Cl. I, Div. 1 & 2, Groups C, D Cl. II, Div. 1, Groups E, F, G Cl. II, Div. 2, Groups F, G Cl. III NEMA: 3, 7CD, 9EFG, 12	No	2	Quicklag®	240VAC	30	10,000	No
LP1	Cl. I, Div. 1 & 2, Groups B, C, D Cl. II, Div. 1, Groups E, F, G Cl. II, Div. 2, Groups F, G Cl. III NEMA: 3, 4X, 7BCD, 9EFG, 12	Yes	36	Quicklag®	240VAC	100	10,000	No
LP2	Cl. I, Div. 2, Groups B, C, D Cl. II, Div. 2, Groups F, G Cl. III NEMA: 3, 4X, 7BCD, 9EFG, 12	Yes	36	Quicklag®	240VAC	100	10,000	Yes
N2PB	Cl. I, Div. 2, Groups C, D Cl. II, Div. 2, Groups F, G NEMA: 3, 7CD, (Div. 2), 12 Corrosion Resistant, Non-Metallic	Yes	24	Quicklag®	240VAC	30	10,000	No
NLP	NEMA 3, 12	No	30	QO/Qwik-Guard®	240VAC	100	10,000	No
SPB	Class I, Zone 1 Cl. I, Div. 2, Groups A, B, C, D Cl. II, Div. 1, Groups E, F, G	Yes	60	Various	480VAC	40	10,000	No
XLBP	NEMA 1, 3, 3R, 4, 4X, 12	No	42	Various	600VAC	100	10,000	Yes

Quicklag is a registered trademark of Cutler-Hammer Inc. QO/Qwik-Guard is a registered trademark of Square D.

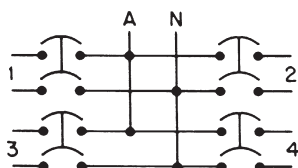
1A Circuit Breaker Panelboards

Wiring Diagrams

D2PB Panelboards

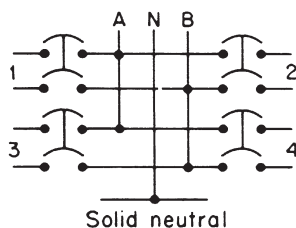
System 1

Mains—2-Wire
Branches—2-Wire
Breakers—2-Pole



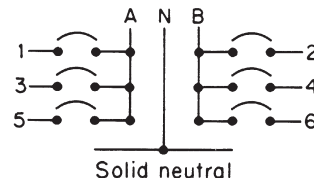
System 3

Mains—3-Wire
Branches—3-Wire
Breakers—2-Pole
Solid Neutral



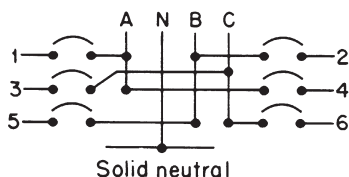
System 4

Mains—3-Wire
Branches—2-Wire
Breakers—Single-Pole
Solid Neutral



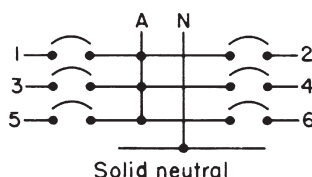
System 5

Mains—4-Wire, 3-Phase
Branches—2-Wire, 1-Phase
Breakers—Single-Pole
Solid Neutral



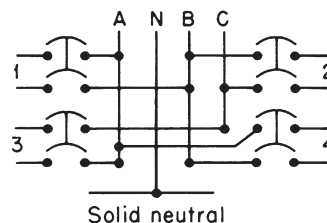
System 7

Mains—2-Wire
Branches—2-Wire
Breakers—Single-Pole
Solid Neutral



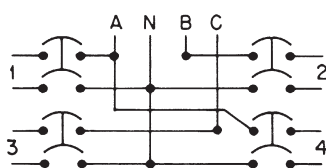
System 8

Mains—4-Wire, 3-Phase
Branches—3-Wire, 1-Phase
Breakers—2-Pole
Solid Neutral



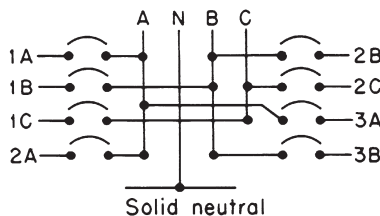
System 13

Mains—4-Wire, 3-Phase
Branches—2-Wire, 1-Phase
Breakers—2-Pole



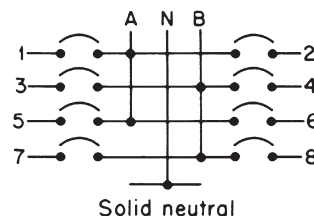
System 15

Mains—4-Wire, 3-Phase
Branches—3-Wire, 1-Phase
Breakers—Single-Pole
Solid Neutral



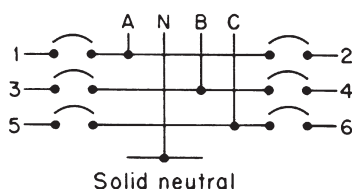
System 24

Mains—3-Wire
Branches—2-Wire
Breakers—Single-Pole
Solid Neutral



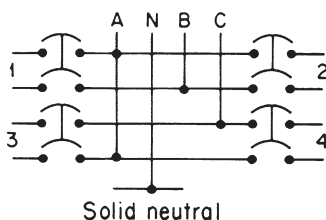
System 25

Mains—4-Wire, 3-Phase
Branches—2-Wire, 1-Phase
Breakers—Single-Pole
Solid Neutral



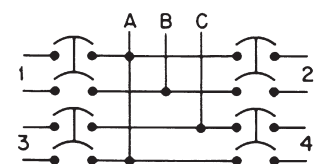
System 28

Mains—4-Wire, 3-Phase
Branches—3-Wire, 1-Phase
Breakers—2-Pole
Solid Neutral



System 29

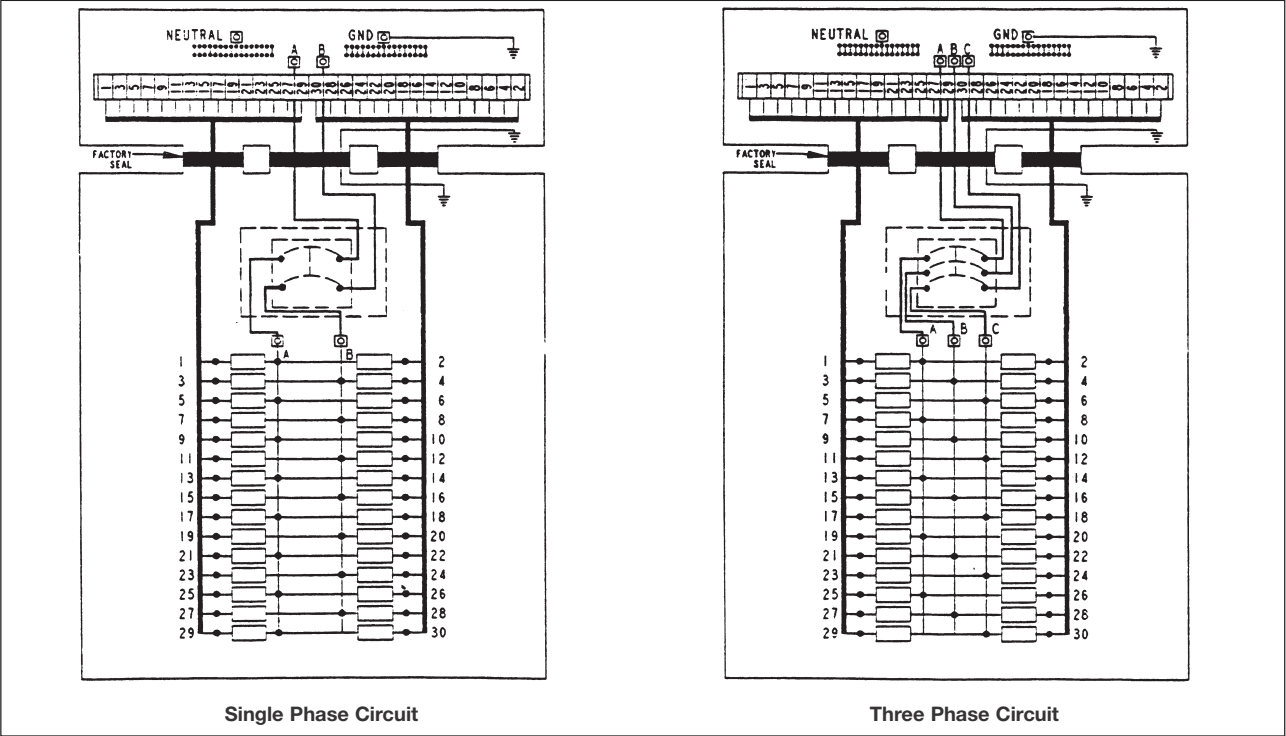
Mains—3-Wire, 3-Phase
Branches—2-Wire, 1-Phase
Breakers—2-Pole



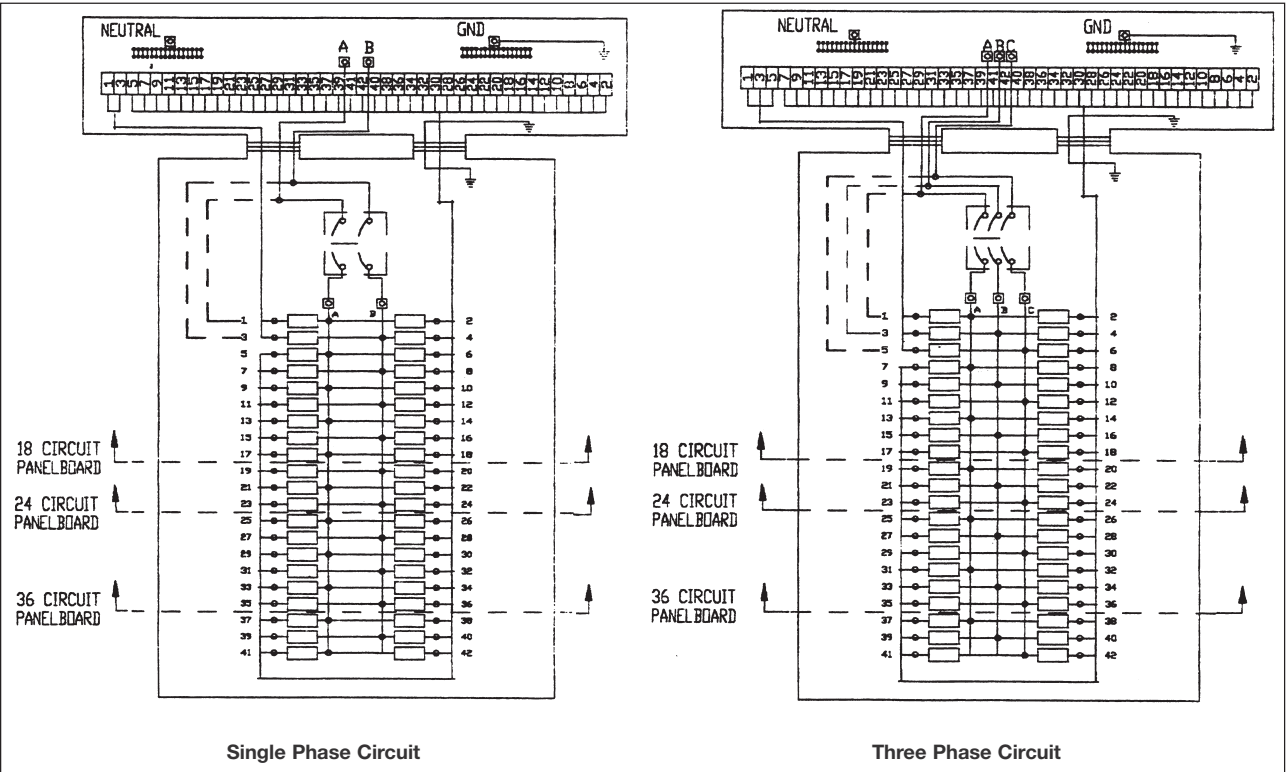
1A

Wiring Diagrams

PowerPlus™ Power Panelboards



PowerPlus™ Lighting Panelboards



1A Exactra™ Panelboards

Lighting and Heat Tracing LP1 Series LP2 Series (Div. 2)

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. II, Div. 1, Groups E†, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 4*, 4X§, 7B†CD, 9EFG, 12

CSA Enc. 3, 4*, 5
Explosionproof
Dust-Ignitionproof
Factory Sealed‡
Wet Locations
Watertight

Exactra™ Factory-Sealed Lighting Panelboards provide flexibility and labor savings when installed, and for future changes in the field. Panels are prewired to maximum circuit capacity and ratings.

Applications:

Exactra™ Factory-Sealed Lighting Panelboards are ideal:

- In areas made hazardous by the presence of flammable gases and vapors, and combustible dusts
- In areas subject to weather, dampness, and corrosion
- For branch power distribution and circuit protection for 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
- In areas where flammable vapors or gases or highly combustible dusts may be present due to accidental or abnormal conditions
- To accommodate up to 35 amp branch loads

Features and Benefits:

- Factory sealed, no external seals required for branch circuits. External seals are required for Class I, Div. 1 applications
- Fully wired for circuit breaker housing to pre-numbered terminals in wiring compartment
- External flange design allows wide unobstructed cover opening for easy wiring access
- External circuit breaker handles can be padlocked "ON" or "OFF"
- Furnished with two 3" and ten 1½" conduit openings
- Breather and drains available for each enclosure
- Available with or without main circuit breaker up to 100 amps
- Isolated neutral and ground bar provided
- Available with up to 6 GFI and/or EPD branch breakers per panel. GFI and EPD branch breakers available within the same panel
- Available with ambient compensated breakers throughout panelboard
- Stainless steel hinges allow the cover to swing wide open or be removed
- Stainless steel hex head bolts captive design prevents lost bolts
- Cast copper-free (less than 0.4%) aluminum construction for excellent corrosion resistance
- Neoprene cover gasket meets NEMA 4 / CSA Enc. 4 / IP65 requirements, provides watertight seal for superior water and corrosion protection
- Copper bus bar system

Certifications and Compliances:

LP1 panelboards

- Class I, Groups B, C, D
- Class I, Zone 1 & 2, IIB + H₂
- Class II, Groups E, F, G
- Class III
- NEMA 3, 4*, 4X§, 7B†CD, 9E†FG, 12
- CSA Enc. 3, 4*, 5
- IP65* Enclosure
- UL Classified (Standard 1203)
- cUL Classified (Certified by UL to CSA C22.2 No. 30)

LP2 Panelboards

- Class I, Division 2, Groups B†, C, D
- Class I, Zone 1 & 2, IIB + H₂
- Class II, Division 2, Groups F, G
- Class III
- NEMA 3, 4*, 4X§, 7BCD (Div 2), 9EFG, 12
- CSA Enc. 3, 4*, 5
- IP65* Enclosure
- UL Classified (Standard 1203)
- cUL Classified (Certified by UL to CSA C22.2 No. 30)

Standard Materials:

- Body and cover – cast copper-free aluminum
- Gasket – neoprene
- Operating handles – extruded aluminum (copper-free)
- Operating shafts, cover bolts, washers, GFI/EPD plungers and hinges – stainless steel
- Circuit breaker operator forks –
 - for 1 pole standard breakers - die-cast aluminum (copper-free)
 - for 1 and 2 pole GFI / EPD breakers - die-cast aluminum (copper-free)
 - for 2 and 3 pole standard breakers - stainless steel
- Lifting bracket – cold rolled steel
- Bus bar – copper

Standard Finishes:

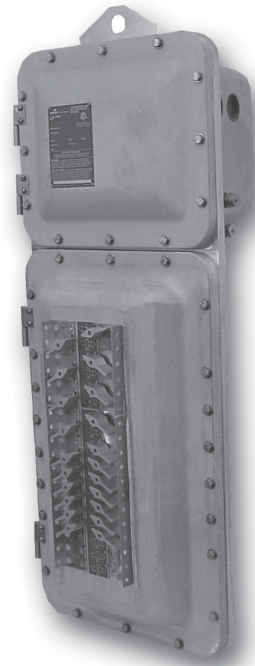
- Aluminum – natural
- Stainless steel – natural
- Cold rolled steel – electrogalvanized

* NEMA 4/CSA Enc. 4/IP65 hoesetight with breather and drain openings plugged.

† With suffix -GB.

‡ External seals required for Class I, Div. 1.

§ NEMA 4X when ordered with suffix S752 with breather and drain openings plugged.



LP1 Lighting Panelboard

Crouse-Hinds
by **Eaton**

Exactra™ Panelboards

Lighting and Heat Tracing
LP1 Series
LP2 Series (Div. 2)

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. II, Div. 1, Groups E†, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 4*, 4X§, 7B†CD, 9EFG, 12
CSA Enc. 3, 4*, 5
Explosionproof
Dust-Ignitionproof
Factory Sealed‡
Wet Locations
Watertight

1A

Electrical Ratings:

Branch Breaker (120 / 240 VAC
Quicklag® Bolt On) Trip Ratings

- 1, 2, 3 pole
- 10, 15, 20, 25, 30, 35 amp
- GFI type 1, 2-pole (5 mA sensitivity)
- 15, 20, 25, 30 amp
- EPD type 1, 2-pole (30 mA sensitivity)
- 15, 20, 25, 30 amp

Main Breaker Trip Ratings:

- Size B & C
- 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60,
70, 80, 90, 100 amp
- 2, 3-pole

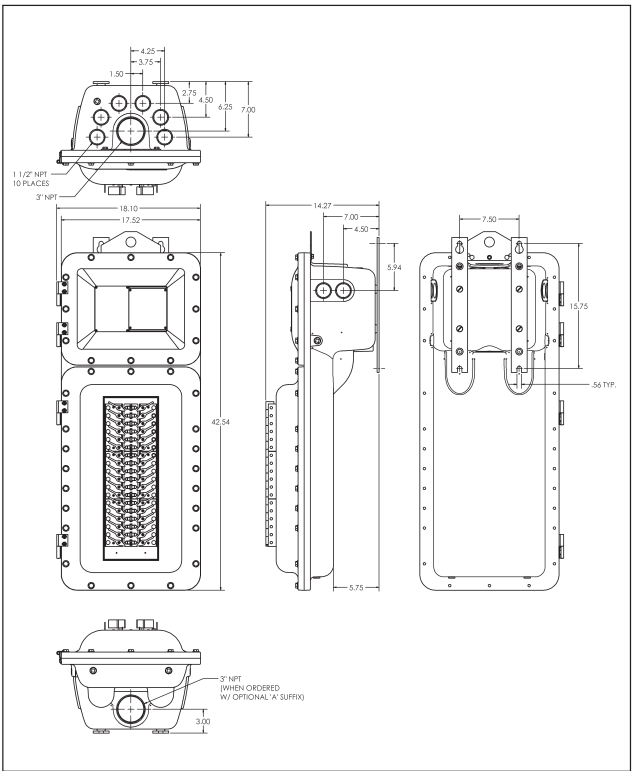
Main Lugs

- Size B & C
- 100 amp

Weight

- 150 lbs.

Dimensions
In Inches:



* NEMA 4/CSA Enc. 4/IP65 hoesitight with breather and drain openings plugged.
† With suffix -GB.
‡ External seals required for Class I, Div. 1.
§ NEMA 4X when ordered with suffix S752 with breather and drain openings plugged.
Quicklag® is a registered trademark of Cutler-Hammer Inc.

Options:

Description	Suffix
• Alternate feed: incoming power into terminal enclosure from bottom	A
• Group B and E suitability (10A not avail.)	GB
• Lamicoid nameplate with customer-specified panel identification	LID
• Stainless steel nameplate with customer-specified panel identification	SID
• 125W@120 VAC, 250W@240 VAC internal space heater in circuit breaker enclosure	R22
• External epoxy powder coat finish	S752
• Internal and external epoxy powder coat finish	S753
• One breather and two drains per enclosure	S756V
• All conduit entries plugged with PLG recessed head plugs	S822
• All conduit entries plugged with square headed plugs	S872
• To order an inverted panelboard with all conduit openings for power and branch circuits on the bottom (inverted)	I

Breaker Options:

Description	Suffix
• EPD branch breaker (up to 6 EPD and/or GFI per panel)	E
• GFI branch breaker (up to 6 EPD and/or GFI per panel)	G
• Ambient compensated (50°C) breakers throughout panelboard	V
• HID branch breaker for lighting loads	H

Lighting Panelboard
Accessories:

Description	Cat. #
• Extra circuit breaker operator assemblies 1-pole (qty. 3)	LP K1
• Replacement cover plugs for unused circuit breaker positions (qty. 6)	LP K2
• Extra circuit breaker operator assemblies for 1 pole and 2 pole GFI/EPD breakers (qty. 3)	LP K3
• GFI/EPD "push to test" plungers (qty. 6)	LP K4
• GFI/EPD entry plugs (qty. 6)	LP K5
• Replacement mounting feet (qty. 2)	LP K6
• Extra circuit breaker operator assemblies for 2 pole standard and GFI/EPD breakers	LP K7
• Extra circuit breaker operator assemblies for 3 pole breakers	LP K8

Panel Capacity:

Panel Size	Max. No. of Branch Spaces			Main Breaker Max. Amp	Available w/GFI, EPD Branch Protection
	With Main Lug Only	With Main 2-pole	With Main 3-pole		
B	24	22	21	100	Yes
C	36	34	33	100	Yes

Lighting and Heat Tracing

LP1 Series

LP2 Series (Div. 2)

Cl. I, Div. 1 & 2, Groups B†, C, D
 Cl. II, Div. 1, Groups E†, F, G
 Cl. II, Div. 2, Groups F, G
 Cl. III
 NEMA 3, 4*, 4X§, 7B†CD, 9EFG, 12

CSA Enc. 3, 4*, 5
 Explosionproof
 Dust-Ignitionproof
 Factory Sealed†
 Wet Locations
 Watertight

Ordering Information

LP1 & LP2 Factory Sealed 120 / 240 Volt Lighting Panelboards

Branch Spaces Needed	Division 1		Division 2	
	1 Phase 3 Wire	3 Phase 4 Wire	1 Phase 3 Wire	3 Phase 4 Wire
6	LP1B106	LP1B306	LP2B106	LP2B306
8	LP1B108	LP1B308	LP2B108	LP2B308
10	LP1B110	LP1B310	LP2B110	LP2B310
12	LP1B112	LP1B312	LP2B112	LP2B312
14	LP1B114	LP1B314	LP2B114	LP2B314
16	LP1B116	LP1B316	LP2B116	LP2B316
18	LP1B118	LP1B318	LP2B118	LP2B318
20	LP1B120	LP1B320	LP2B120	LP2B320
20	LP1C120	LP1C320	LP2C120	LP2C320
22	LP1B122	LP1B322	LP2B122	LP2B322
22	LP1C122	LP1C322	LP2C122	LP2C322
24†	LP1B124†	LP1B324†	LP2B124†	LP2B324†
24	LP1C124	LP1C324	LP2C124	LP2C324
26	LP1C126	LP1C326	LP2C126	LP2C326
28	LP1C128	LP1C328	LP2C128	LP2C328
30	LP1C130	LP1C330	LP2C130	LP2C330
32	LP1C132	LP1C332	LP2C132	LP2C332
34	LP1C134	LP1C334	LP2C134	LP2C334
36†	LP1C136†	LP1C336†	LP2C136†	LP2C336†
Breaker Ready (Empty)	LP1B100 LP1C100	LP1B300 LP1C300	LP2B100 LP2C100	LP2B300 LP2C300

† Items are not available with main circuit breaker.

■ Provided for main lug only; main breaker must be specified with amperage.

Catalog Number Example:

Lighting Panelboards can be furnished with an assortment of breaker ratings and pole configurations. Assortments may be ordered by adding the number of poles and amp rating designations to the catalog number.

Example:

A three-phase, Class I, Div. 2, Groups C, D lighting panelboard with:

- 5 three-pole breakers – with 15 amp rating
- 6 single-pole breakers – with 20 amp GFI personnel protection
- Three-pole main breaker – with 100 amp rating
- Alternate feed option
- Breather and drain option

- Select basic panelboard catalog number from listing:
 - Determine phase (available with single-phase or three-phase wiring).
 - Determine a total even number of breaker spaces needed to complete your desired lighting panelboard.

Note:

3 breaker spaces = Three-pole breaker

2 breaker spaces = Two-pole breaker

2 breaker spaces = Two-pole GFI (or EPD) breaker

1 breaker space = Single-pole breaker

1 breaker space = Single-pole GFI (or EPD) breaker

• Review Panel Capacity table see page 631

• If GFI or EPD breakers are to be included insert "G", "E" or "EG" after base catalog number (e.g., LP2B316G).

• Maximum number of GFI and/or EPD breaker spaces is 6 per panel. (e.g. 6 single-pole or 3 two-pole).

For more, consult factory.

• If ambient compensated breakers are required, insert "V" (e.g. LP2B318GV).

- Using three-pole branch breakers first, select circuit breakers for lighting panel board application:
 - Place an asterisk (*) before each quantity of circuit breakers
 - First insert the quantity of breakers needed.
 - Second insert the quantity of poles (start with three-pole breakers).

Note: Single-phase panelboards can have single- or two-pole breakers. Three-phase panelboards can have single, two- or three-pole breakers.

• Third insert the ampere rating needed (start with highest ampere rating).

• Insert "G" for GFI or "E" for EPD type breakers, if desired.

- For additional circuit breakers repeat step 2. If there are more three-poles with different amp ratings, then continue with three-pole designations. Otherwise continue with two-pole circuit breakers, and then single-pole breakers.
- To add a main breaker, insert a space, the number of poles (2 or 3), an "M" to indicate main breaker, then indicate the amp rating (See "ratings" for trip ratings available). If no main breaker is specified, the panelboard will have main lugs. No suffix needed in catalog number for main lug only.

For future spaces, to provide for operating mechanism without breaker write 00 (e.g. one three-pole mechanism without breaker: 01300).

Unused breaker positions without designations will be blanked and plugged. Complete panel will be provided for future breaker installations.

Example would be ordered as: LP2C 3 22 G * 05 3 15 *06120G 3M100 A S756V

- Select Div. 2 Lighting Panelboard - LP2
 - C size enclosure to handle 21 breaker spaces with main circuit breaker and GFI/EPD protection
 - 3 phase
 - 5 three pole = 15 breaker spaces
6 single pole (GFI) = 6 breaker spaces
21 breaker spaces
If odd # round up to even #: 22 breaker spaces
 - GFI breakers included ("G" for GFI, "E" for EPD or "EG" for both) ("V" for ambient compensated breakers)
Maximum number of GFI and/or EPD breakers is 6
- Choose branch circuit breakers (three-pole first)
6 three-pole with 15 ampere rating:
 - Insert asterisk (*)
 - Quantity is 5: 05 (if less than 10 insert 0 before quantity)
 - Three-pole: 3
 - Ampere rating is 15: 15
- Additional breakers (three-pole first)
5 single-pole with 20 amp rating (GFI): *06120G
- Main breaker 3M100 (3-pole, Main breaker, 100 amp)
- Alternate feed A
Breathers and drains S756V

* NEMA 4/CSA Enc. 4/IP65 hoesitight without suffix S756V.

‡ External seals required for Class I, Div. 1.

§ NEMA 4X when ordered with suffix S752 without suffix S756V.

†With suffix -GB.

Exactra™ Panelboards

Lighting and Heat Tracing

LP1 Series

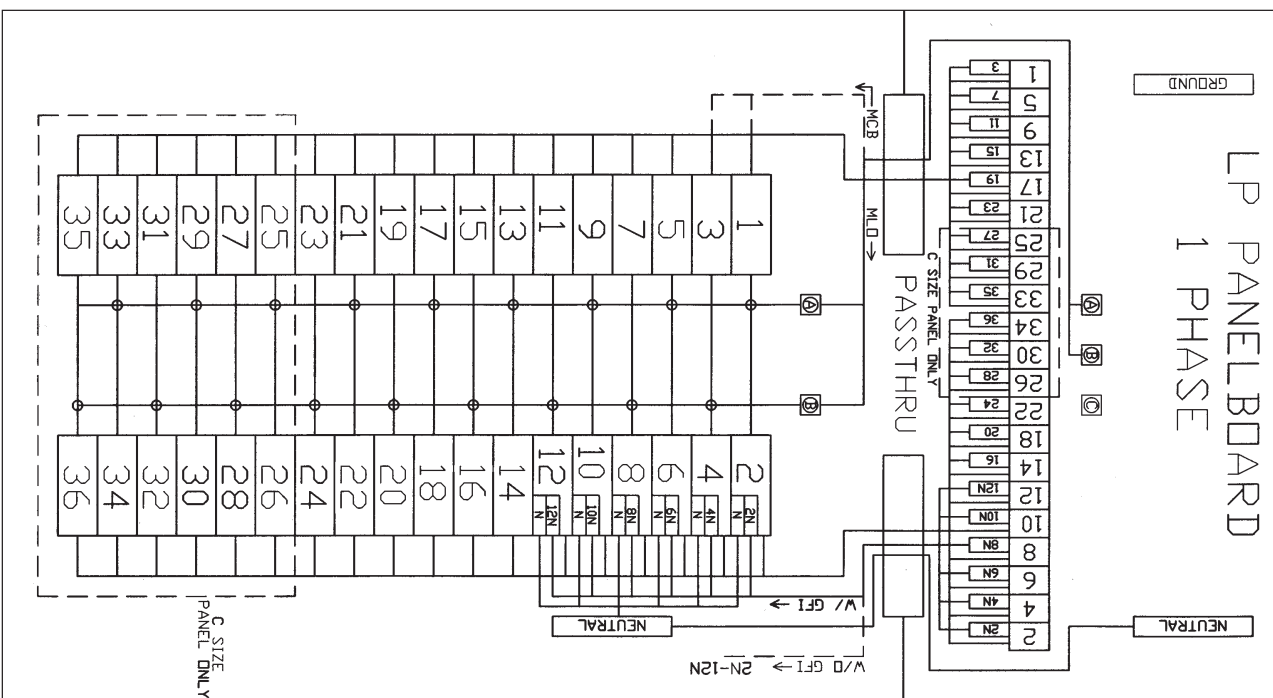
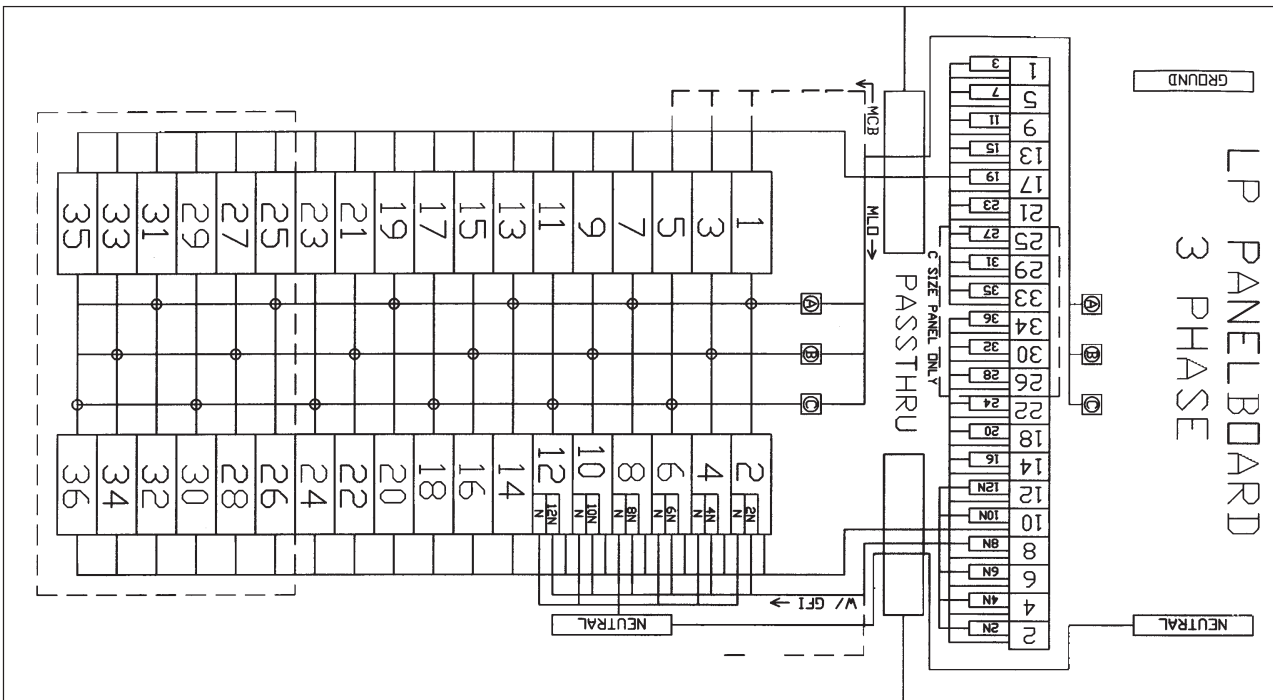
LP2 Series (Div. 2)

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. II, Div. 1, Groups E†, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 4*, 4X§, 7B†CD, 9EFG, 12

CSA Enc. 3, 4*, 5
Explosionproof
Dust-Ignitionproof
Factory Sealed†
Wet Locations
Watertight

1A

Wiring Diagrams:



* NEMA 4/CSA Enc. 4/IP65 hoesitght without suffix S756V.

† External seals required for Class I, Div. 1.

§ NEMA 4X when ordered with suffix S752 without suffix S756V.

† With suffix -GB.

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by **E.T.N.**

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633

1A PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H₂†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EE MAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:

Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H₂†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EE MAC: 3, 4, 4X‡, 7B†CD, 12

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.

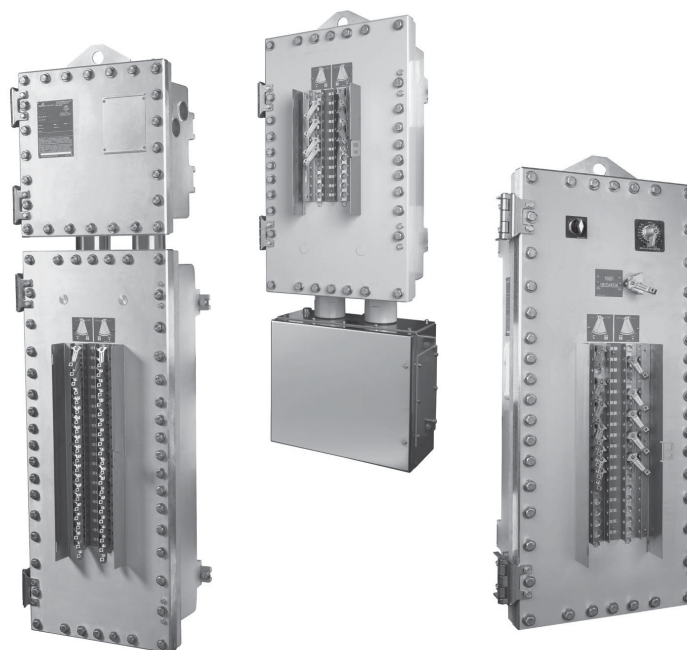
PowerPlus Premium and Value Solutions

- **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 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:

EPL and D2L 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 and Compliances:

EPL Series:

- NEC/CEC:
 - Class I, Division 1 & 2, Groups B†, C, D
 - Class I, Zone 1 & 2, IIB + H₂†
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- NEMA/EE MAC: 3, 4, 4X‡, 7B†CD, 9EFG, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 1203
- cUL (to CSA Standard C22.2 Nos. 29 & 30)
- IP65

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/EE MAC: 3, 4, 4X‡, 7B†CD, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 1203
- cUL (to CSA Standard C22.2 Nos. 29 & 30)
- IP65

Standard Materials and Finishes:

- Circuit breaker enclosure body and cover – copper-free aluminum
- Terminal housing – type 316L stainless steel ("S") or copper-free aluminum ("A")
- Gasket – neoprene (cast aluminum enclosure); 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 – 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

† 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

Delrin® is a registered trademark of DuPont.

PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H2†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:

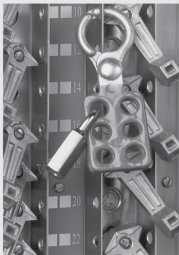
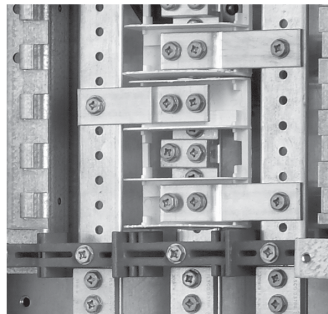
Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H2†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EMAC: 3, 4, 4X‡, 7B†CD, 12

1A



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 panels come standard with a high-quality silver-plated copper buss system. This provides high-efficiency 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.

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.



**EPLCN or
EXDCN***

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

† 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 separately.
‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

1A PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H₂†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEAC 3, 4, 4X†, 7B†CD, 9EFG, 12

D2L Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H₂†

Cl. II, Div. 2, Groups F, G

Cl. III

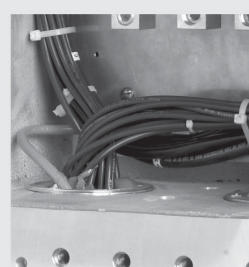
NEMA/EEAC 3, 4, 4X†, 7B†CD, 12

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.

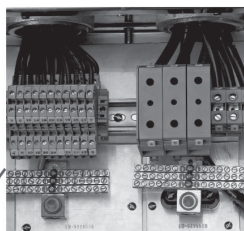
PowerPlus cast enclosures are manufactured with an external flange design. This design allows for a wide unobstructed cover opening and provides a completely accessible interior for ease of maintenance and wiring.

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.



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.

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.

D2LBS (Inverted) or D2DBS (Inverted)

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

††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.

† 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

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by **E•T•N**

PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H‡

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H‡

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

1A

Electrical Ratings:

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 F: 225 amps
- Size D: not available; main breaker only

Options:

To add the following features to the panelboard, add a dash and then the suffix to the Cat. No. When multiple suffixes are needed, add them to the Cat. No. in alpha-numeric order.

Description	Suffix
Space heater.....	R22
Square head plugs on all conduit openings.....	SP
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	G
EPD breakers.....	E
HID breakers	H
Ambient compensated breakers (50°C).....	V
Lamacoid Nameplate.....	LID

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 entries on top (alternate)..... -A**

To order an inverted panelboard with all conduit openings for power and branch circuits on the bottom (inverted)..... -I

To order an inverted panelboard with main power feed on top and bottom (alternate inverted)..... -A-I**

Accessories:

Gland Plates

Field installable gland plates with factory-provided aluminum Myers™ Hubs for the D2L 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):

- ¾" branch entry hub
- 1" branch entry hub
- 1 ½" branch entry hub
- Replacement gland plate (no hubs)

Part Number
D2L HUB2 KIT
D2L HUB3 KIT
D2L HUB5 KIT
D2L HUB0 KIT

Circuit Breaker Operator Assemblies:

Operator Assemblies

- D2L/EPL 1-pole or 3-pole breakers
- D2L/EPL 2-pole breakers

Part Number
EPL HDL13
EPL HDL2

Replacement Cover Plugs:

For unused circuit breaker positions (qty. 5):

Plug Kits

- D2L/EPL Sizes B, C, D

Part Number
EPL OP PLG

Kit for Group B

Standard panels less -GB suffix are applicable for Group B, but it is required to install brackets on breakers.

Part Number
add suffix -GB
EPL GB KIT

D2L/EPL Stainless Steel Breaker Operator Cover

To protect operators from ice build-up for all

D2L/EPL PowerPlus panels:

- Kit for Size B panel
- Kit for Size C and D panel

Part Number
EPL-HG24-KIT
EPL HG42-KIT

Space Heater Kit

D2L/EPL PowerPlus Panels

EPL R22 KIT

Terminal Housing Mounting Plate Kit:

To adapt depth of terminal housing to same depth as breaker enclosure ***

Panel Types / Sizes

- D2L/EPL Sizes B, C, D
- D2L Sizes B, C, D

Part Number	Terminal Housing
EPLA-MTG-KIT	Aluminum
D2LS-MTG-KIT	Stainless

† Group B and IIB + H 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

** Not available in D2L/EPL Size D panels.

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

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1A PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H₂†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H₂†

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

Table A – Panel Capacity

Maximum Number of Breaker Spaces:

Panel Size	Max. No. of Branch Circuit Breaker Spaces			Available Main Breaker Ampacity	Available With GFI, EPD Branch Protection
	With Main Lug Only	With Main Breaker 2-pole	With Main Breaker 3-pole		
B	24	22	21	Up to 100■	Yes
C§	42	40	39	Up to 100■	Yes
D	42	36	36	110 to 225⊕	Yes
		42	42	Up to 225⊕	Yes

Table B – To Size Panels with GFI or EPD Branch Breakers

Maximum Number of GFI or EPD Breakers

Panel Size with Main Lug or Main Breaker	Single-Pole	Two-Pole
B	21	12 (10 with 3-pole MCB, 11 with 2-pole MCB)
C	21	14
D	EPLDN only - can go up to 42 GFI or EPD circuits. EPLDN will accommodate up to 225 amp main breaker.	

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.

	Load Wires Required
Single-pole breaker	1
Single-pole GFI (or EPD) breaker	2
Two-pole breaker	2
Two-pole GFI (or EPD) breaker	3
Three-pole breaker	3
	Maximum Total: 42 load wires (factory sealed)
EPLDN Panels	Maximum Total: 84 load wires (non-factory sealed)

† 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

§ 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.

⊕ Main breakers are mounted external to chassis.

■ Main breakers are chassis mounted and back-fed.

PowerPlus™ Panelboards

Lighting and Heat Tracing EPL Series (Div. 1 & 2) D2L Series (Div. 2)

EPL Series:
Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H₂†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:
Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H₂†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

1A

Lighting Panelboard Catalog Number Example

Example:

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:

D2L C S 3 30G * 28 1 20 * 01 1 15G - 3 M 225 -GB

- Select panel type
D2L = Div. 2 / Zone 2 Panelboard
EPL = Div. 1 & 2 / Zone 1 & 2 Panelboard
- Select size of enclosure
B = 24 circuit panel
C = 42 circuit panel (36 circuit panel with main breaker greater than 100 amps)
D = 42 circuit panel
- Select terminal enclosure material type
Premium Solution
S = stainless steel terminal housing (Div. 2 / Zone 2 panels only)
A = cast aluminum terminal housing
Value Solution
N = no terminal housing (non-factory-sealed - Div. 1 & 2 / Zone 1 & 2)
- Select panel phase
1 = single-phase electrical system
3 = three-phase electrical system
- Select breaker spaces
1-pole breaker = 1 breaker space
2-pole breaker = 2 breaker spaces
3-pole breaker = 3 breaker spaces

Example:
(28) 1-pole 20 amp breakers = 28 spaces
+ (1) 1-pole 15 amp GFI breaker = 1 spaces
Total breaker spaces = 29
If odd, round up to even = 30

Note: GFI and EPD each require 1 additional load wire per breaker.
Factory sealed PowerPlus panels offer a maximum of 42 load wires.
For requirements greater than 42, consider non-factory sealed PowerPlus panels.
- Insert asterisk (*) before each branch breaker series
- Quantity of alike branch breakers
- 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)
20 = 20 amps
- Insert asterisk (*) before each branch breaker series
- Quantity of alike branch breakers
- Branch breaker pole rating (see #8 above)
- Branch breaker ampere rating
15 = 15 amps
G = GFI breakers
15G = GFI with 15 amps
- Dash indicates that main breaker follows
- Main breaker number of poles
18. Group B Option
17. Indicates main breaker amperage rating
16. M indicates main breaker

† 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

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by **E•T•N**

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1A PowerPlus™ Panelboards

Lighting and Heat Tracing

EPL Series (Div. 1 & 2)

D2L Series (Div. 2)

EPL Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H₂†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2L Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H₂†

Cl. II, Div. 2, Groups F, G

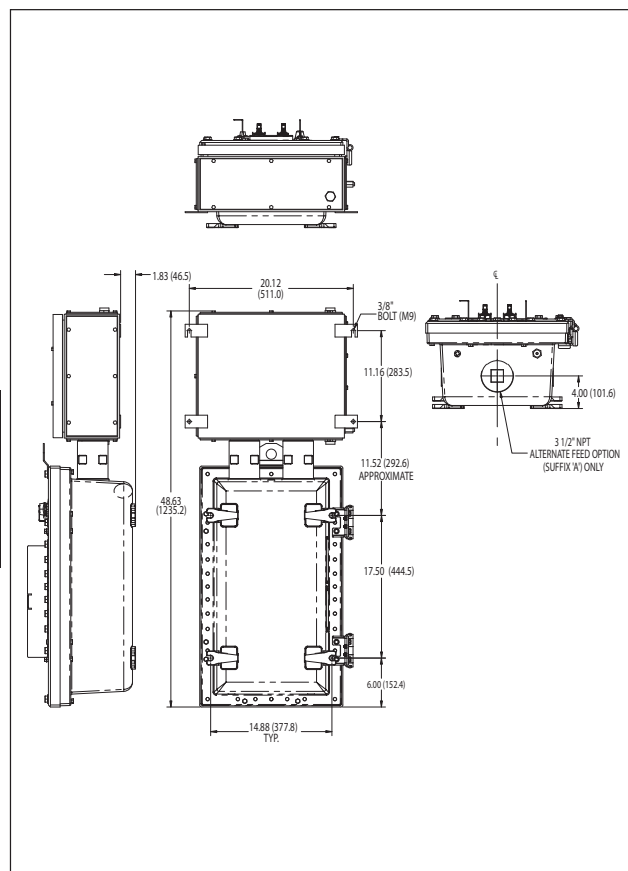
Cl. III

NEMA/EMAC: 3, 4, 4X‡, 7B†CD, 12

Dimensions

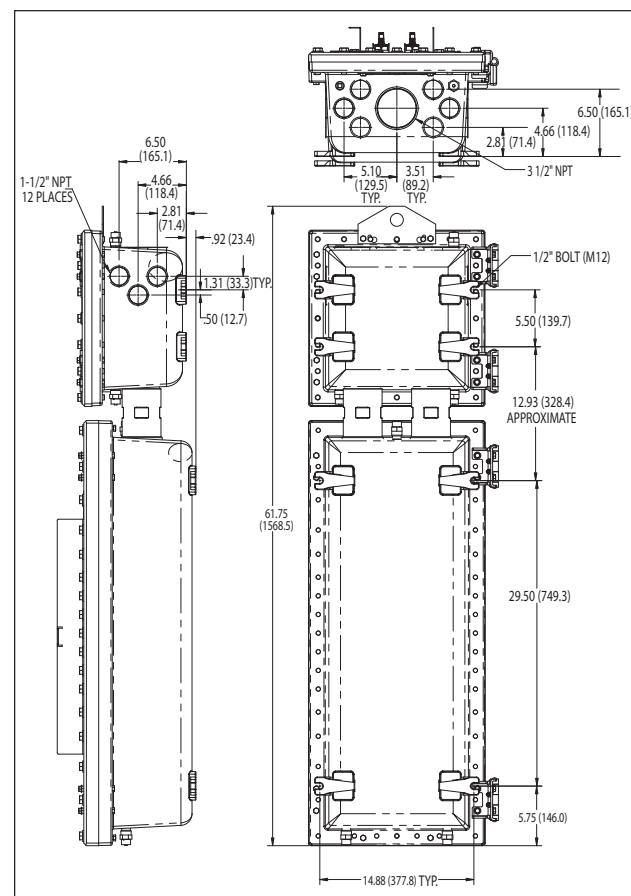
Size B Panel*

(With Stainless Steel Terminal Housing)



Size C and D Panel*

(With Cast Terminal Housing)



† 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 separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

*Stainless steel and cast aluminum terminal housing for Sizes B, C, and D are the same. Note: Value series non-factory-sealed EPL*N panel dimensions are the breaker housing only and use standard entries shown on cast terminal housing.

PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H₂†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC 3, 4, 4X†, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H₂†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC: 3, 4, 4X†, 7B†CD, 12

1A

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.

PowerPlus Premium and Value Solutions

- **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:

EXD and D2D 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 and Compliances:

EXD Series:

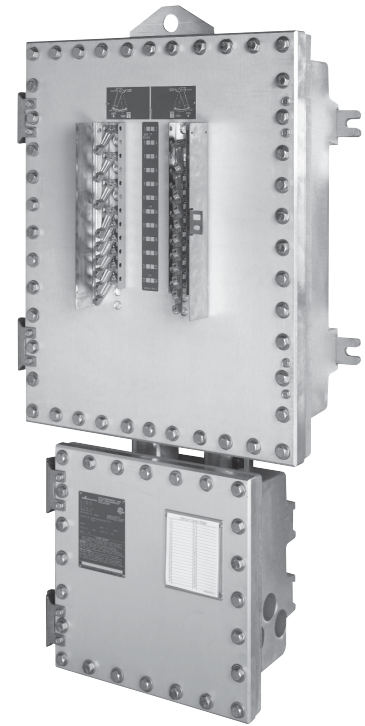
- NEC/CEC:
 - Class I, Division 1 & 2, Groups B†, C, D
 - Class I, Zone 1 & 2, IIB + H₂†
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- NEMA/EEMAC: 3, 4, 4X†, 7B†CD, 9EFG, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 1203
- cUL (to CSA Standard C22.2 Nos. 29 & 30)
- IP65

D2D 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†CD, 12
- CSA Enc. 3, 4, 5
- UL Standard: 67, 1203
- cUL (to CSA Standard C22.2 Nos. 29 & 30)
- IP65

Standard Materials and Finishes:

- Circuit breaker enclosure body and cover – copper-free aluminum
- Terminal housing – type 316L stainless steel ("S") or copper-free aluminum ("A")
- Gasket – neoprene (cast aluminum enclosure); 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 – EXD/D2D 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

**1A**

†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 EXD-GB-KIT for Sizes B, C, and D separately.
‡NEMA 4X rating is available when ordered with suffix S752 or S753.
Delrin® is a registered trademark of DuPont.

Crouse-Hinds

by **E.T.N**

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1A PowerPlus™ Panelboards

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

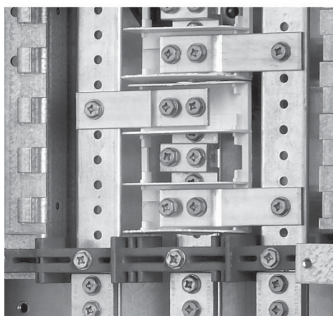
EXD Series:
Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H2†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/IEEAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:
Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H2†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/IEEAC: 3, 4, 4X‡, 7B†CD, 12



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



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.



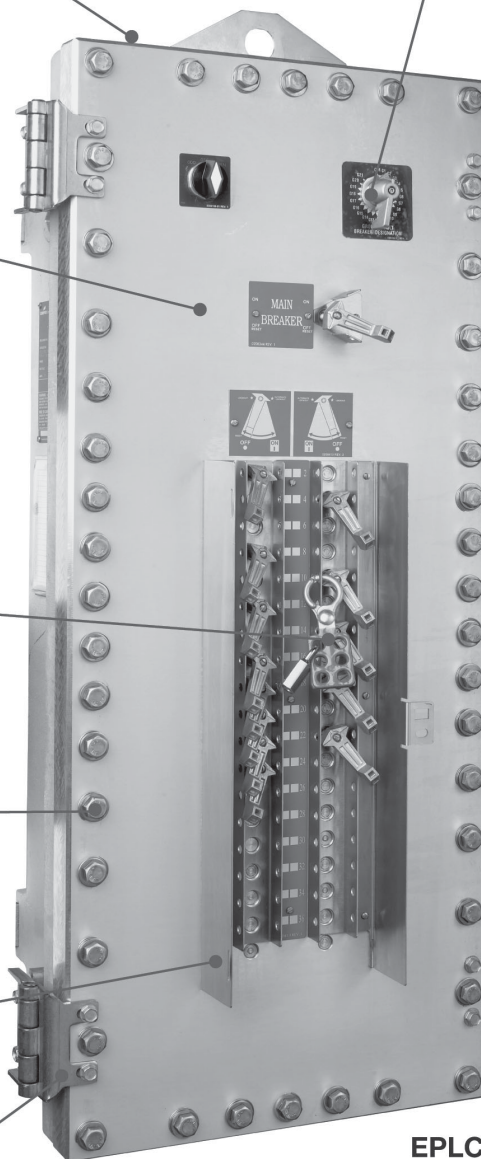
Each branch and main breaker handle is provided with lockout/tagout capability, which complies with OSHA lockout/tagout requirements for safety. This allows for locking in the ON or OFF position for standard maintenance checks.

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.



**EPLCN or
EXDCN***

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

† 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 EXD-GB-KIT for sizes B, C and D separately.
‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H2†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H2†

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

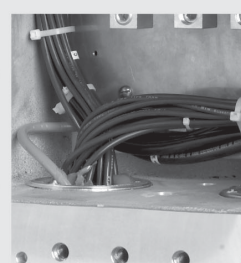
1A

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.

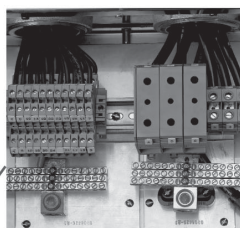
PowerPlus cast enclosures are manufactured with an external flange design. This design allows for a wide unobstructed cover opening and provides a completely accessible interior for ease of maintenance and wiring.

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.



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.

††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.

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.

† 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 EXD-GB-KIT for sizes B, C and D separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

Crouse-Hinds

by E.T.N

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1A PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H2†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H2†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

Electrical Ratings:

Branch Breakers Trip Ratings:

Panel Size	Voltage	Phase / Wire	Main Breaker Amperage	Branch Breaker
B	480Y/277	3P 4W	Up to 100	G-frame
	480Δ	3P 3W	Up to 100	G-frame
C	480Y/277	3P 4W	Up to 100	G-frame
	480Δ	3P 3W	Up to 100	G-frame
D	480Y/277	3P 4W	Up to 225	G-frame
	480Δ	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 (G-Frame Cutler-Hammer™):

- 1-, 2-, and 3-pole: GHB 480/277Y (standard offering)
- 2- and 3-pole: GDB 480Δ (requires suffix -GDB)
- 1-, 2-, and 3-pole GBH 600Y/347 (requires suffix -GBH; contact factory)
- 15, 20, 25, 30, 35, 40, 45, 50 amp (available in all breaker spaces in panel), 60, 70, 80, 90, 100 amp (only 3 breaker spaces available)‡‡
- 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 (available in all breaker spaces in panel), 80, 90, 100 amp (only 3 breaker spaces available)
- Breaker types available†††
 - FDB: 2-, and 3-pole 600V
 - FD: 1-, 2- (277V), and 3-pole (600V)
 - HFD: 1-, 2- (277V), and 3-pole (600V)
 - EHD: 1-, 2- (277V), and 3-pole (480V)

Main Breaker Trip Ratings:

- 2- and 3-pole (contact factory for single phase sizes B, C, D)
- Size B, C: 15 to 100 amps
- Size D, 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 10kAIC
- 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 & 277V
- HFD Breaker: 25kAIC at 600V and 65kAIC at 480V & 277V

Options:

To add the following features to the panelboard, add a dash and then the suffix to the Cat. No. When multiple suffixes are needed, add them to the Cat. No. in alpha-numeric order.

Description	Suffix
Space heater	R44
Square head plugs on all conduit openings•	SP
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•	G
EPD breakers•	E
HID breakers•	H
Ambient compensated breakers (50°C)	V
GDB 480Δ 3P 3W system■	GDB
FDB 600V breakers*	FDB600
FD 600V breakers*	FD600
HFD 600V breakers*	HFD600
Lamacoid Nameplate	LID

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 entries on top (alternate) -A**

To order an inverted panelboard with all conduit openings for power and branch circuits on the bottom (inverted) -I

To order an inverted panelboard with main power feed on top and bottom (alternate inverted) -A-I**

†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 EXD-GB-KIT for Sizes B, C, and D separately.

‡NEMA 4X rating is available when ordered with suffix S752 or S753.

††For 480Δ 3P 3W system or for 600VAC, a suffix is required. Note: for single-pole 480Δ, GHB breakers will be furnished for Sizes B, C, and D.

†††Two-pole GDB breakers are only available up to 50 amps.

†††F-frame breakers are only available in Size F panel with up to a maximum of 30 circuit spaces.

•Please contact factory. Single pole 480V EPD available. For all others, please contact factory. Two breaker positions for single pole EPD: odds start at position 1; evens start at position 4.

■Available in D2D and EXD Sizes B, C, and D only.

*Available with D2D and EXD Size F panels only.

**D2D/EXD Sizes C and D are only available with up to 36 circuits.

•Not available on stainless terminal housings.

PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H₂†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H₂†

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

1A

Accessories:

Gland Plates

Field installable gland plates with factory-provided aluminum Myers™ Hubs for the 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):

¾" branch entry hub

1" branch entry hub

1 ½" branch entry hub

Replacement gland plate (no hubs)

Part Number

D2D HUB2 KIT

D2D HUB3 KIT

D2D HUB5 KIT

D2D HUB0 KIT

Circuit Breaker Operator Assemblies:

Operator Assemblies

D2D/EXD All breakers panel Sizes B, C, D

D2D/EXD All breakers panel Sizes F

Part Number

EXD HDL123

EXD K1

Replacement Cover Plugs:

For unused circuit breaker positions (qty. 5):

Plug Kits

D2D/EXD Sizes B, C, D

D2D/EXD Size F

Part Number

EXD OP PLG

EXD K2

Kit for Group B

Standard panels less -GB suffix are applicable for Group B, but it is required to install brackets on breakers.

To order brackets factory installed

For field installable kit (Sizes B, C, D)

Part Number

add suffix -GB

EXD GB KIT

D2D/EXD Stainless Steel Breaker Operator Cover

To protect operators from ice build-up for all D2D/EXD

PowerPlus panels:

D2D/EXD PowerPlus panels

Part Number

Contact Factory

Space Heater Kit

D2D/EXD PowerPlus panels

EXD R44 KIT

Terminal Housing Mounting Plate Kit:

To adapt depth of terminal housing to same depth as breaker enclosure ***

Panel Types / Sizes

D2D/EXD Sizes B, C, D

D2D Sizes B, C, D

Part Number

EXDA-MTG-KIT

D2DS-MTG-KIT

Terminal Housing

Aluminum

Stainless

†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 EXD-GB-KIT for Sizes B, C, and D separately.

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

‡NEMA 4X rating is available when ordered with suffix S752 or S753.

1A PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H2†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12 NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H2†

Cl. II, Div. 2, Groups F, G

Cl. III

Table A – Panel Capacity

Maximum Number of Breaker Spaces:

Panel Size	Max. No. of Branch Circuit Breaker Spaces			Available Main Breaker Ampacity	Available With GFI, EPD Branch Protection***
	With Main Lug Only	With Main Breaker 2-pole*	3-pole		
B	24	22	21	Up to 100■	No
C	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 B – To Size Panels with GFI or EPD Branch Breakers

Maximum Number of GFI or EPD Breakers

Panel Size with Main Lug or Main Breaker	Single-Pole	Two-Pole
B	21	12 (10 with 3-pole MCB, 11 with 2-pole MCB)
C	21	14
D	EPLDN only - can go up to 42 GFI or EPD circuits. EPLDN will accommodate up to 225 amp main breaker.	

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.

Load Wires Required

Single-pole breaker	1
Single-pole GFI (or EPD) breaker	2
Two-pole breaker	2
Two-pole GFI (or EPD) breaker	3
Three-pole breaker	3
Maximum Total: 42 load wires (factory sealed)	
Maximum Total: 82 load wires (non-factory sealed)	

EPLDN Panels

† 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 EXD-GB-KIT for Sizes B, C and D separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

* Contact factory for single phase size B, C, or D.

⊕ Main breakers are mounted external to chassis.

■ Main breakers are chassis mounted and back-fed.

***GFI, EPD for D2D/EXD are not standard options. If required, please contact factory. Single pole 480V EPD available. For all others, please contact factory. Two breaker positions for single pole EPD: odds start at position 1; evens start at position 4.

PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. I, Zone 1 & 2, IIB + H2†
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D
Cl. I, Zone 2, IIB + H2†
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

1A

Power Panelboard Catalog Number Example

Example:

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:

	D2D	D	S	3	42	V	*	42	1	20	-	3	M	225	-GB	-GDB
1. Select panel type																
D2D - Division 2 / Zone 2 Panel																
EXD - Division 1 / Zone 1 Panel																
2. Select size of enclosure (refer to Electrical Ratings Chart)																
B = max. 24 circuit panel																
C = max. 42 circuit panel (when ordered, main circuit breaker is chassis mounted)																
D = max. 42 circuit panel w/ main breaker (main circuit breaker is non-chassis mounted)																
F = max. 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 (consult factory for sizes B, C, D)																
3 = three-phase electrical system																
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																
8. Quantity of alike branch breakers																
9. Branch breaker pole rating																
1 = single-pole breaker																
2 = 2-pole breaker																
3 = 3-pole breaker																
10. Branch breaker ampere rating (numerical value represents ampere rating)																
15 = 15 Amps																
20 = 20 Amps																
25 = 25 Amps																
30 = 30 Amps																
35 = 35 Amps																
40 = 40 Amps																
50 = 50 Amps																
60 = 60 Amps																
70 = 70 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, C: 15 to 100 amps																
Size D, F: 15 to 225 amps																
15. Options																
GB = Group B Kit factory-installed																
GDB = GDB frame breakers with 480Δ 3P 3W System																

†Even number of breaker spaces is required. For odd number of spaces, round up to next even number.

† 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 EXD-GB-KIT for sizes B, C and D separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

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by E.T.N

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1A PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H2†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H2†

Cl. II, Div. 2, Groups F, G

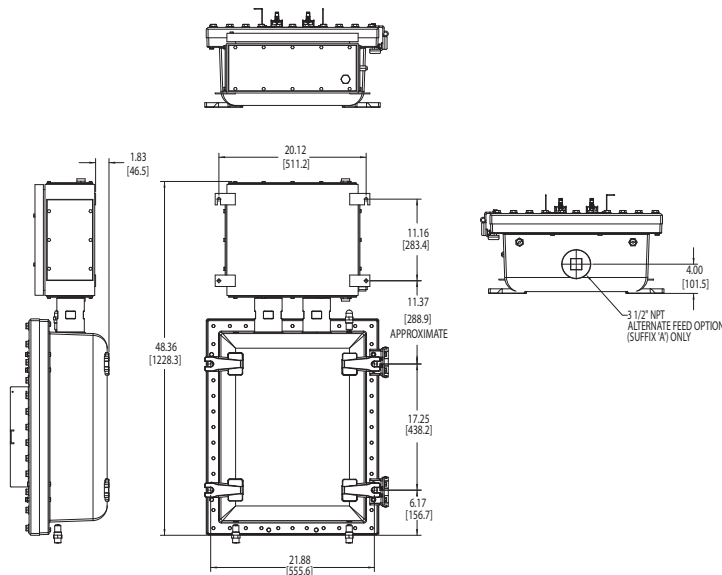
Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

Dimensions

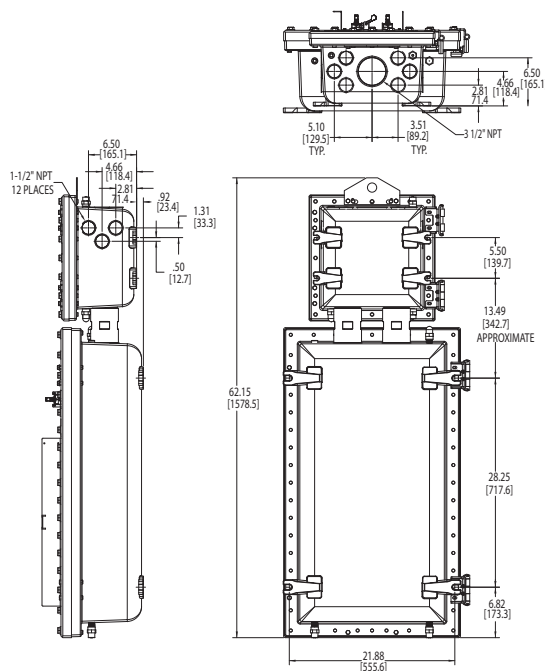
Size B Panel*

(With Stainless Steel Terminal Housing)



Size C and D Panel*

(With Cast Aluminum Terminal Housing)



† 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 EXD-GB-KIT for sizes B, C and D separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

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

Note: Value series non-factory-sealed EXD*N panel dimensions are the breaker housing only and use standard entries shown on cast terminal housing.

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by **Eaton**

PowerPlus™ Panelboards

Power

EXD Series (Div. 1 & 2)

D2D Series (Div. 2)

EXD Series:

Cl. I, Div. 1 & 2, Groups B†, C, D

Cl. I, Zone 1 & 2, IIB + H2†

Cl. II, Div. 1, Groups E, F, G

Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC 3, 4, 4X‡, 7B†CD, 9EFG, 12

D2D Series:

Cl. I, Div. 2, Groups B†, C, D

Cl. I, Zone 2, IIB + H2†

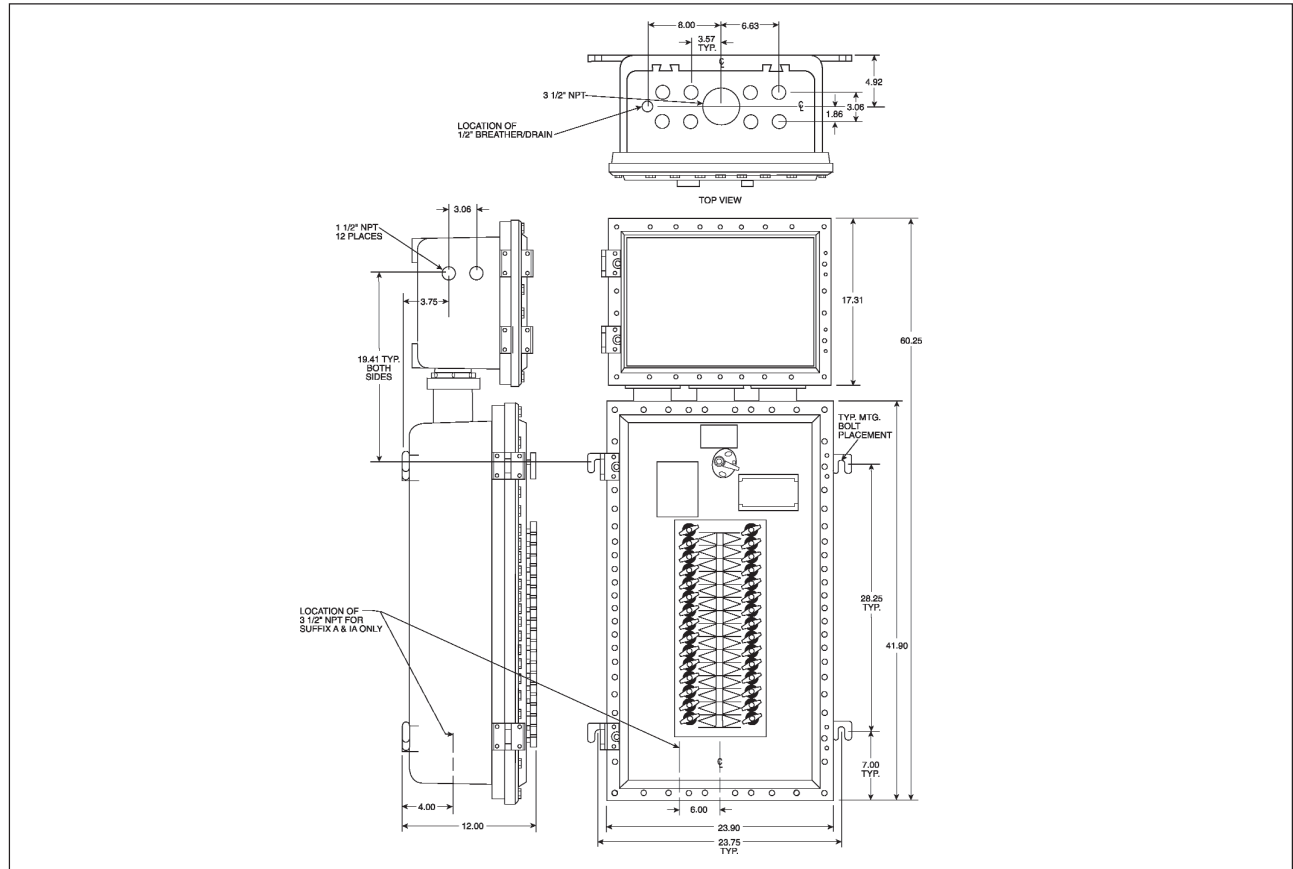
Cl. II, Div. 2, Groups F, G

Cl. III

NEMA/EEMAC: 3, 4, 4X‡, 7B†CD, 12

1A

Size F Panel



† 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 EXD-GB-KIT for sizes B, C and D separately.

‡ NEMA 4X rating is available when ordered with suffix S752 or S753.

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

Note: Value series non-factory-sealed EXD*N panel dimensions are the breaker housing only and use standard entries shown on cast terminal housing.

Crouse-Hinds

by **EATON**

www.crouse-hinds.com US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2013 Eaton's Crouse-Hinds Business

649

Power, lighting, and heat tracing panels for Class I, Division 2 applications

Cl. I, Zone 1, Aex de IIC T4

Type 4X, IP66

Ex de IIC T4

Cl. I, Div. 2, Groups A, B, C, D

Cl. II, Div. 1, Groups E, F, G, Extb IIIC

T100°C Db

SynergEX Panelboards offer superior solutions utilizing individually encapsulated circuit breakers to provide maximum safety in the most extreme environments. The finger safe design provides ultimate flexibility and speed during installation, normal operations and maintenance activities in the field. This advanced design is approved for all hazardous gases, which allows for operation in multiple locations and hazardous situations.

Applications:

SynergEX Panelboards provide overcurrent and short circuit protection for low voltage power, lighting, and heat tracing applications in indoor and outdoor hazardous areas, such as:

- Refineries
- Chemical and petrochemical plants
- Mining
- Corrosive process facilities
- Food processing facilities
- Indoor and outdoor industrial applications

Features:

- Lightweight design for reduced labor and equipment installation
- Dead-front design allows for operating breakers without hot permit
- Finger safe design eliminates safety risk for personnel
- Patented friction welded encapsulated molded-case circuit breakers
- Robust design providing operations in all gas groups and extreme hot/cold environments
- Front viewing window for easy visual indication of breaker status
- Quick snap encapsulated circuit breakers (no bolts or screws)
- Removable gland plates for easy addition of entries
- Gangable for main breaker housing

Certifications and Compliances:

NEC/CEC:

- Class I, Zone 1, Aex de IIC T4
- Ex de IIC T4
- Class I, Division 2, Groups A, B, C, D
- Class II, Division 1, Groups E, F, G, Extb IIIC T100°C Db
- Type 4X, IP66

Electrical Ratings:

SynergEX Panelboard:

- Max. 225A / Phase (3 phase max.)
- Max. 480VAC
- Max. 225A main breaker (external enclosure)
- 10kA short circuit current

Encapsulated Circuit Breakers:

- 480/277VAC
 - 1-, 2- and 3-pole
 - 10, 15, 20, 25, 30, 35, 40 amps
 - Auxiliary and signal contact
- 240/120VAC
 - 1-, 2- and 3-pole
 - 10, 15, 20, 25, 30, 35, 40 amps
 - 1-pole GFI and EPD
 - Auxiliary and signal contact



Standard Materials:

- Enclosure – 316L stainless steel or painted steel
- Observation window – laminated safety glass
- External parts (hinges, screws, washers, ¼ turn locks, gland plates) – 316L stainless steel
- Internal parts (screws, washers, back plate, fasteners) – 304 stainless steel
- Gasket – silicone
- Dead-front panel – flame rated fiberboard (V-1)
- Bus bars – nickel-plated copper
- Filler plates – flame rated nylon (V-0)
- Bonding/grounding assembly – brass
- Encapsulated circuit breakers – flame rated nylon (V-2)

Options:

Description

Breather and Drain
Main Breaker (100A, 150A, 225A)

Heater (-40°C)

Bottom Feed Inverted Panelboard

Gland Plates (see locations below)

Suffix

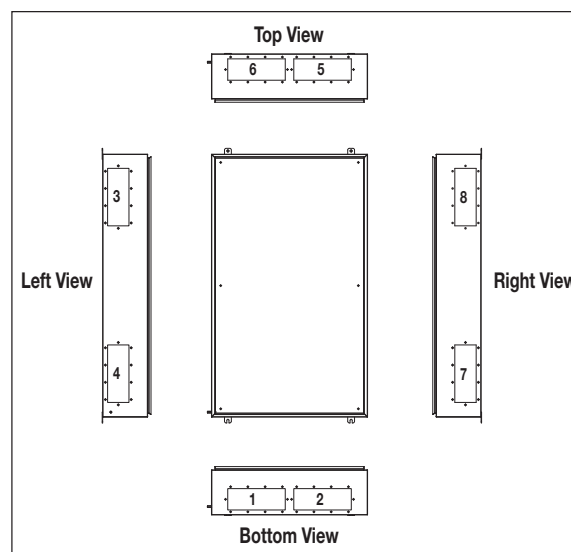
BD

See Catalog
Numbering System

HTR

I

GP1-GP8



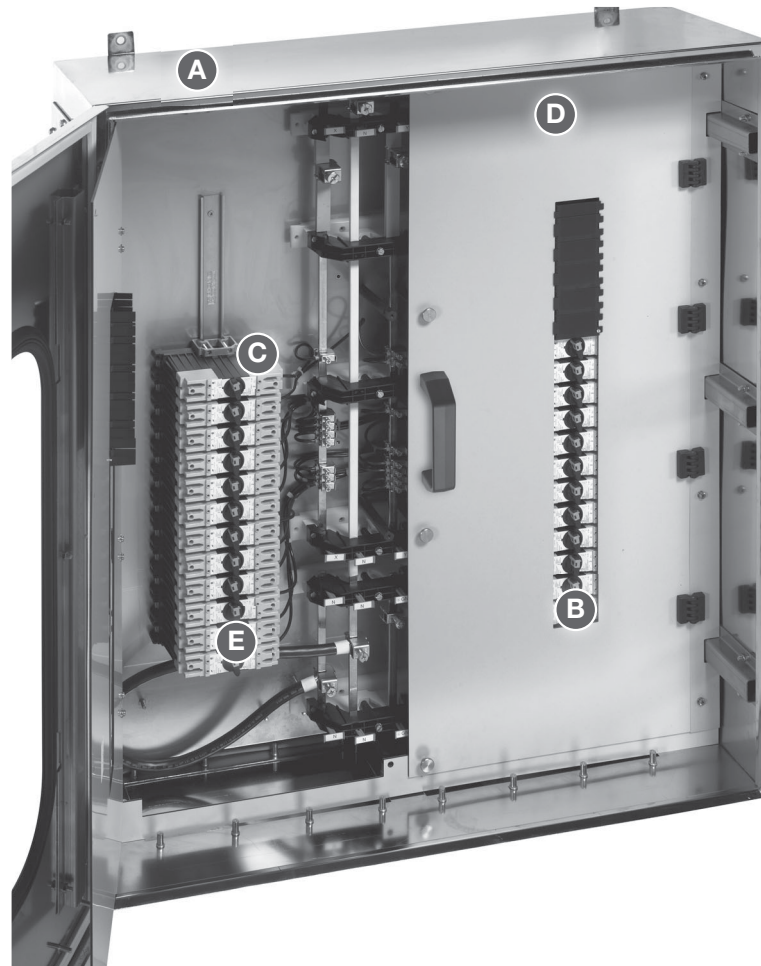
SynergEX Panelboards

Power, lighting, and heat tracing panels for Class I, Division 2 applications

Cl. I, Zone 1, Aex de IIC T4
Ex de IIC T4
Cl. I, Div. 2, Groups A, B, C, D
Cl. II, Div. 1, Groups E, F, G, Extb IIIC
T100°C Db

Type 4X, IP66

1A



1A

- Ⓐ **Extreme temperature durability** - This panelboard is designed to withstand temperatures ranging from -40°C to +55°C, offering operational durability in the most extreme environments.
- Ⓑ **Efficient breaker operation** - Dead front design allows for breakers to be easily and quickly reset.
- Ⓒ **Certified for all hazardous gases** - The individually encapsulated breakers are certified for all hazardous gases (ABCD, IIC), allowing an end-user to install the product in a variety of hazardous locations.
- Ⓓ **Finger safe configuration** - Enhanced finger safe design prevents contact with live parts, ensuring personnel safety.
- Ⓔ **Quick snap, screwless breaker replacement** - Our circuit breakers are individually encapsulated without any bolts or screws, greatly reducing installation time and cost.

**Power, lighting, and heat tracing
panels for Class I, Division 2
applications**

Cl. I, Zone 1, Aex de IIC T4

Ex de IIC T4

Cl. I, Div. 2, Groups A, B, C, D

Cl. II, Div. 1, Groups E, F, G, Extb IIIC

T100°C Db

Type 4X, IP66

Catalog Numbering System:

SERIES	SIZE	MATERIAL	PANEL PHASE	PANEL VOLTAGE RATING	BREAKER SPACES	ASTERISK	QUANTITY OF ALIKE BRANCH BREAKERS	BRANCH BREAKER POLE RATING	BRANCH BREAKER AMPERE RATING	DASH	MAIN BREAKER	DASH	OPTIONS	GLAND PLATES
SPB	A	S	1	1	12	*	12	1	10	-	3M100	-	HTR	GP1GP2GP3

Series
SPB

Enclosure Size

A = 12 CCT

B = 24 CCT

C = 42 CCT

D = 60 CCT

Enclosure Material Type

S = 316L Stainless Steel (Type 4X)

P = 304 Painted Steel (Type 4X)

Panel Phase

1 = Single Phase

3 = Three Phase

Panel Voltage Rating

1 = 120/240V (1 Phase, 3 Wire)

2 = 208/120V (3 Phase, 4 Wire)

4 = 480/277V (3 Phase, 4 Wire)

Breaker Spaces

1P Breaker = 1 Space TOTAL NUMBER OF BREAKER SPACES UTILIZED

2P Breaker = 2 Spaces ROUND UP TO AN EVEN NUMBER

3P Breaker = 3 Spaces

Insert Asterisk (*) Before Each Branch Breaker Series

Quantity of Alike Branch Breakers

Branch Breaker Pole Rating

1 = 1P Breaker

1AX = 1P Breaker + Auxiliary

1SC = 1P Breaker + Signal Contact

2 = 2P Breaker

2AX = 2P Breaker + Auxiliary

2SC = 2P Breaker + Signal Contact

3 = 3P Breaker

3AX = 3P Breaker + Auxiliary

3SC = 3P Breaker + Signal Contact

1G = 1P GFI

1E = 1P EPD

Branch Breaker Ampere Rating

Example: 20 = 20A NUMERICAL VALUE REPRESENTS AMPERE RATING

Dash Indicates Main Breaker to Follow

Main Breaker

2- or 3-pole, 15 to 225A (Example: 3M100 - 3-pole main breaker, 100A)

Note: Breakers above 40A to be housed in separate enclosure

Dash Indicates Options to Follow

Option Suffixes (see page 4 for available options)

Gland Plates

Gland plates at locations 1, 2 and 3 are standard

SynergEX Panelboards

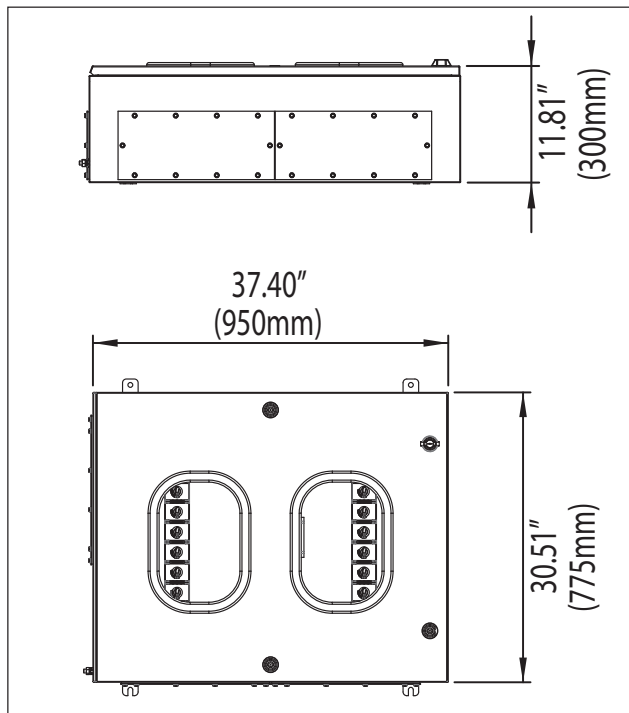
Power, lighting, and heat tracing panels for Class I, Division 2 applications

Cl. I, Zone 1, Aex de IIC T4
Ex de IIC T4
Cl. I, Div. 2, Groups A, B, C, D
Cl. II, Div. 1, Groups E, F, G, Extb IIIC
T100°C Db

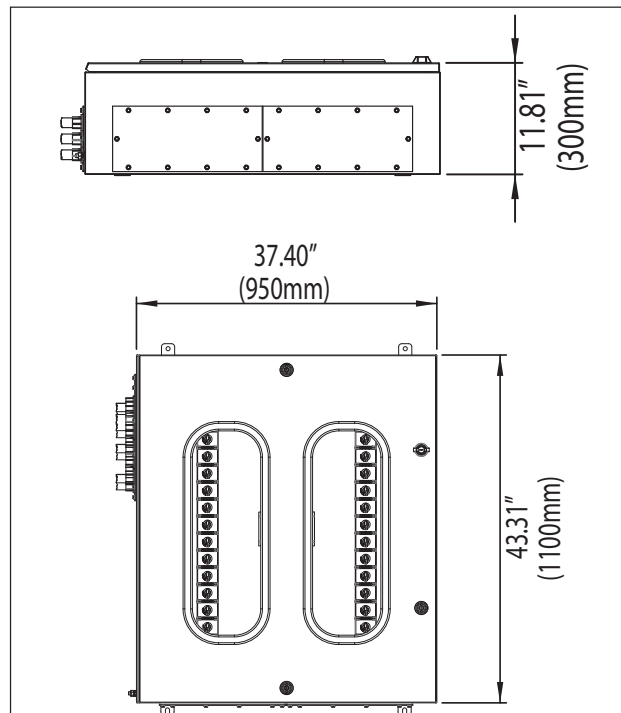
Type 4X, IP66

1A

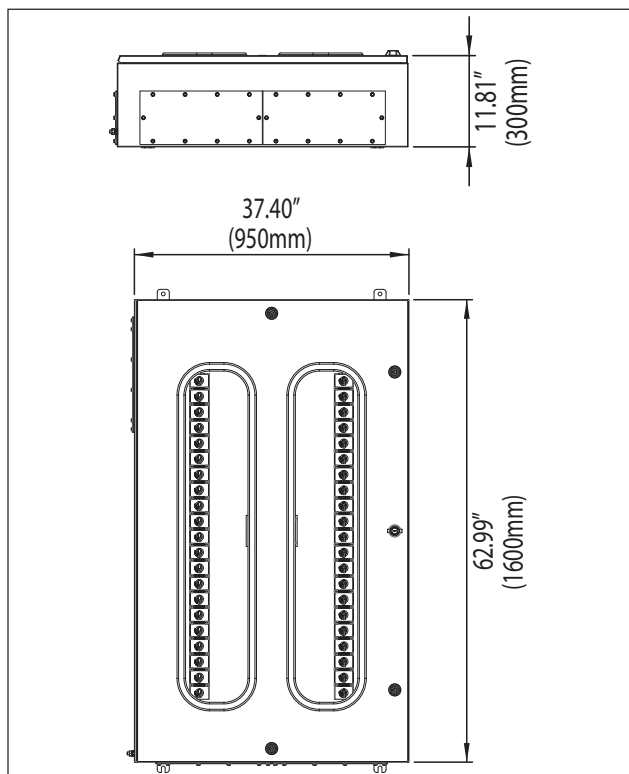
Dimensions: 12 Circuits



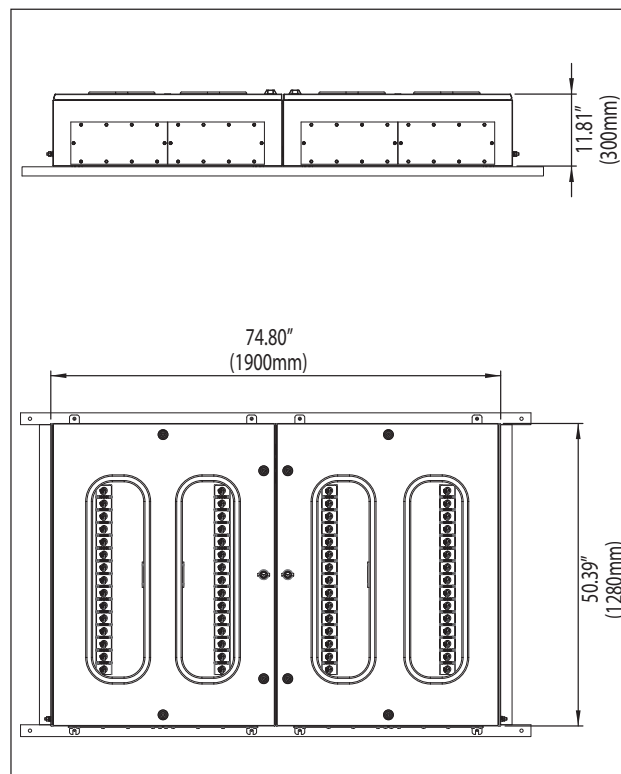
24 Circuits



42 Circuits



60 Circuits



Crouse-Hinds
by **EATON**

D2Z Panelboards Zone 1, Division 2

Non-metallic or Stainless Steel

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

Applications:

D2Z panelboards are designed specifically for use in:

- Class I, Zone 1, Division 2, Groups A, B, C, D hazardous area locations.
- In damp, wet or corrosive locations.
- Indoors or outdoors in Zone 1, Division 2 areas of petroleum refineries, chemical and petrochemical plants, and other process industry facilities.

Features:

- cCSAus, PTB* certified for Class I, Zone 1, Division 2 hazardous areas.
- Fiberglass-reinforced polyester enclosures:
 - Non-metallic, corrosion-free
 - Increased safety Ex-e protection
 - Impact resistant
 - NEMA 4X, IP65
 - Enclosure meets UL 94-VO
 - UV listed
- 316L stainless steel enclosures (suffix S860):
 - Corrosion resistant
 - Industrial grade thickness
 - NEMA 4X, IP65
- Unique design allows for panels with more than 42 circuits.
- Main disconnect switches 40, 80, 125, 180A.
- Optional flameproof Ex-d fusing of main disconnect.
- Flameproof Ex-d encapsulated UL 489 branch circuit breakers:
 - Thermal-magnetic protection up to 40A with 240 VAC circuit breakers.
 - Thermal-magnetic protection up to 25A with 480 VAC circuit breakers.
 - Auxiliary contacts (mechanical or electrical).**
 - Lockout on components.
 - Prewired to Increase Safety terminal blocks.
 - GFI branch breakers (EPDs).**
- Clear, NEMA 4X / IP65 window, hinged for actuation or breakers.
- Double lockout on windows and breakers.
- Brass plates for hub or cable gland entries.
- Enclosures are to be vertically mounted on switchrack frames or walls.
- Completely pre-wired ready for connection to terminal blocks.

Certifications and Compliances*:

Certifications	cCSAus
Degree of Protection	NEMA 4X
	IP65 to IEC 60529
UV Resistance	ISO 4892
Enclosure Material	Glass-reinforced polyester
Temperature Ratings	-55°C to 40°C***
Rated Voltage	480 VAC
Rated Current	Max. 180A

- NEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class I, Zone 1, Group IIC
- CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class I, Zone 1, Group IIC
 - Class II, Division 1, Groups E, F, G
- UL Standards:

UL60079-0
UL60079-1
UL60079-7
UL60079-18
C22.2 E60079-0-02
C22.2 E60079-1-02
C22.2 E60079-7-2003
C22.2 E60079-18-95

- CSA Standards:



D2Z with fiberglass-reinforced polyester enclosure



D2Z with 316L stainless steel enclosure (suffix S860)

Options:

The following special options are available from the factory by adding the suffix to the Cat. #:

Description

D2Z Series panelboards are now available with 316L stainless steel enclosures. This material is ideal for wash down and corrosive areas requiring product endurance in adverse locations.

*Available with ATEX certification, please consult factory.

**Available with only UL 1077 supplemental protectors.

***For ambients -20°C or less, optional heater is required.

Suffix

S860

Crouse-Hinds
by **EATON**

D2Z Panelboards
Zone 1, Division 2

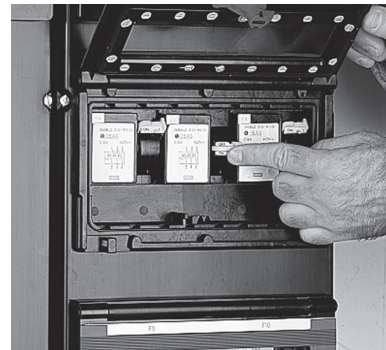
Non-metallic or Stainless Steel

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

1A

Technical Data



- **Large windows** permit easy viewing and quick access to breakers without opening the enclosures.
- **Lockouts** standard for both windows and breakers
- **Up to 6 single-pole breakers** can be installed under one window.
- **NEMA 4X, IP65 protection.**
- **Window locks** with 5/16" (8mm) Allen Key.



Main Switch

- 40A main switch, 4-pole, optional fusing in enclosure with window(s).
- 80, 125 and 180A main switch, 4-pole, optional fusing in enclosure.

Branch Circuit Breakers

1-pole, 2-pole, 3-pole, 4-pole; with EPD protection 1-pole + Neutral, 2-pole; 2, 6, 10, 16, 20, 25, 32 and 40 Amps

Explosion Protection

Ex de IIC
AEx de IIC
Class I, Zone 1, Div. 2, Groups A, B, C, D
Class II, Div. 1, Groups E, F, G
cCSAus
Up to max. 480 VAC
Up to 40A
10k AIC
UL489 Circuit Breakers
"Z" or "K"
30mA (up to 300mA on request)
Fiberglass-reinforced epoxy

Certifications

Rated Operating Voltage

Rated Current

Rated Switching Capacity

Circuit Breaker Characteristics

Tripping Characteristics

Tripping Current for EPDs

Circuit Breaker Enclosure Materials

Optional Auxiliary/Signal Contacts**

Rated Voltage

250 VAC

Rated Current

5A

Main Disconnect Switch

40, 80, 125, 180A, 4-pole

Explosion Protection

Ex de IIC T6
AEx de IIC T6
Class I, Zone 1, Div. 2, Groups A, B, C, D
Class II, Div. 1, Groups E, F, G

Rated Operating Voltage

Up to 690 VAC

Motor Switching Capacity AC3***

Type	230V	400V	500V	690V
40A	40A	40A	40A	32A
80A	80A	80A	80A	63A
125A	125A	125A	125A	110A
180A	180A	180A	150A	125A

***See IEC 60947-3.

* "Z" Branch breakers are used for all general applications such as lighting and heat tracing.

Type "K" breakers are used for MOVs and portable power. Contact factory for other application.

** Aux contacts indicate mechanical or electrical tripping

Signal contacts indicate only electrical tripping and are used primarily on heat-tracing circuits.

Branch breakers with signal contacts require next larger breaker enclosure.

D2Z Panelboards
Zone 1, Division 2

Non-metallic or Stainless Steel

Cl. I, Div. 2, Groups A, B, C, D AEx de IIC T4, T6
Cl. I, Zone 1, Group IIC Ex de IIC T4, T6
Cl. II, Div. 1, Groups E, F, G NEMA 4X, IP65

Main Fuse, 3-pole

Explosion Protection

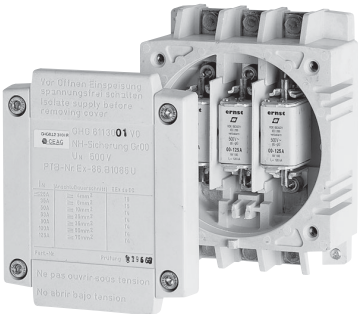
Ex de IIC
AEx de IIC
Class I, Zone 1, Div. 2, Groups A, B, C, D
Up to max. 500 VAC

Rated Operating Voltage

Rated Current

Current	Temperature Class in Board
25A	T6
35A	T5
50A	T4
63A	T4
80A	T4
100A	T4
125A	T4

Recommended manufacturer: Eaton's Bussmann type NH00G fuses for general use or N00M for motor applications.
Specify Amperage (Fuses not provided)



Main Fuse, type NH

Standard Entries

Brass gland plate
with Zone 1 Myers
adapter hubs: (STM series)

Metric Entries
(remove hubs)

Main supply
Branches

(1) 2" + (3) 1"
(9) 3/4"

(1) M63 + (3) M32
(9) M25



- **Universal Wiring** – Zone 1 Myers™ adapter hubs for conduit or Terminator™ cable glands.
- **Stainless Steel Hubs** – available upon request.

D2Z Panelboards Zone 1, Division 2

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

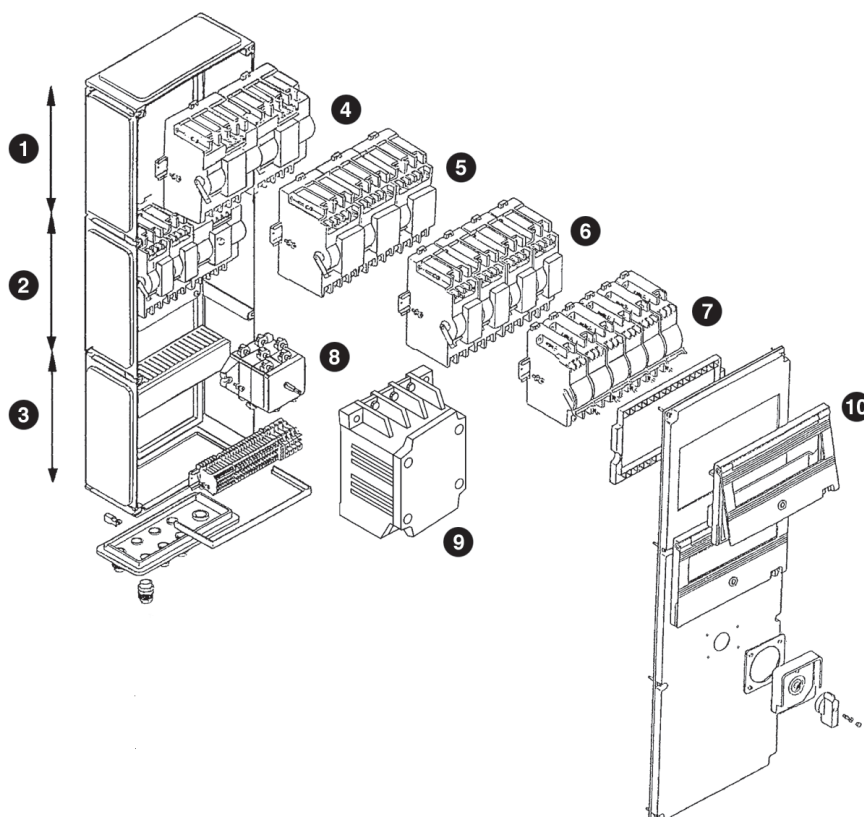
AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

1A

Non-metallic or Stainless Steel

SpecOne™ D2Z Panelboard Construction Layout

Example of D2Z distribution panel with built-in components under the window. (available mounting width = 213mm)



D2Z panel with 3 mounting spaces

- 1 Mounting Space – 190mm
- 2 Mounting Space – 190mm
- 3 Mounting Space – 190mm
- 4 (2) 4 pole breakers – width 106mm each (available mounting width – 213mm)
- 5 (3) 3 pole breakers – width 70mm each (available mounting width – 213mm)
- 6 (4) 2 pole breakers – width 53mm each (available mounting width – 213mm)
- 7 (6) 1 pole breakers – width 35mm each (available mounting width – 213mm)
- 8 40A main switch, 4-pole. 1 mounting space required
- 9 Main fuse. 1 mounting space required in place of 1 window
- 10 Window

1A

D2Z Panelboards Zone 1, Division 2

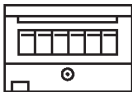


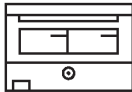
Non-metallic or Stainless Steel

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

Ordering Procedure Step 1: Window

Determine the number of windows required from the following chart based on the number of branch breakers. Multiply breaker space by number of breakers. Round the sum total to the next highest whole number to determine required windows. i.e. For (8) 1-pole and (2) 2-pole breakers: $(8 \times 0.16) + (2 \times 0.25) = 1.78 = 2$ windows required.

	Max. No. Per Window	Branch Circuit Breakers (max 40A)	Space Required For Each Breaker
	6	1-pole	.16
	4	2-pole or 1-pole with EPD or 1-pole with signal contact	.25
	3	3-pole or 1-pole + Neutral with signal contact or 2-pole with signal contact	.33
	2	4-pole or 2-pole with EPD or 3-pole with signal contact	.50

Step 2: Disconnect Switch

If a disconnect switch is required, select suffix from table.

Main Switch Disconnect

	3-phase	Single Phase
40	-3S* 40	-2S* 40
80	-3S* 80	-2S* 80
125	-3S* 125	-2S* 125
180	-3S 180	—

*Add F if fuses required. Fuses supplied by others. See page 656

D2Z Panelboards
Zone 1, Division 2

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

1A

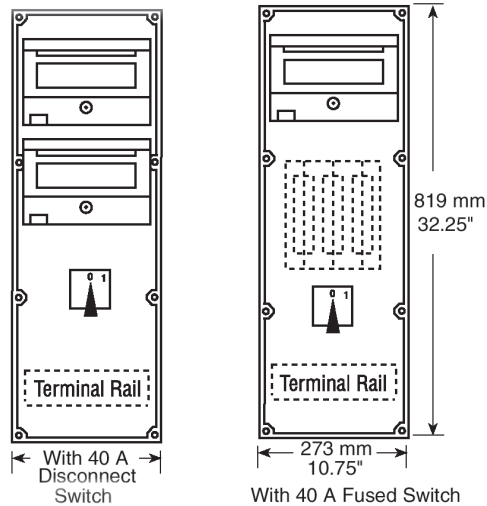
Non-metallic or Stainless Steel

Step 3: Panel Size

Determine Panel Size Based on Windows Required

Number of Windows Required	Type Required	Disconnect
1, 2	A mini panel	40A disconnect – Integral
3	B panel	Optional – Adjacent
4 – 6	C panel	Optional – Adjacent
7 – 9	D panel	Optional – Adjacent

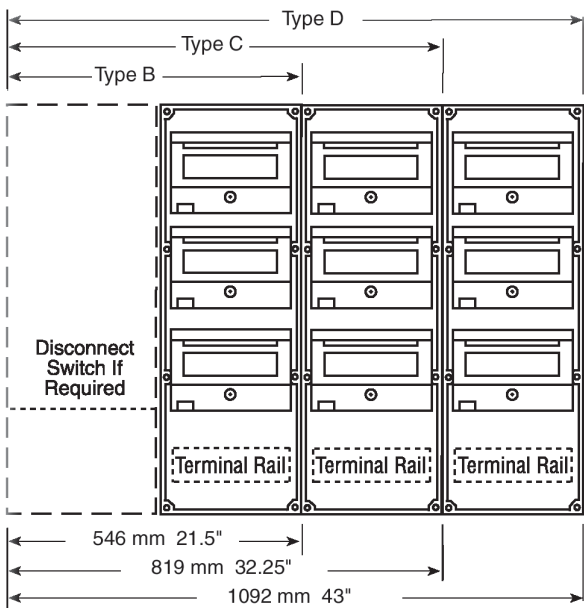
Type A Mini Panels with Main Switch



40A 3-Phase	40A Fused 3-Phase	Quantity of Single Circuits
D2Z A306 - 3S40*	D2Z A306 - 3SF40*	6
D2Z A308 - 3S40*		8
D2Z A310 - 3S40*		10
D2Z A312 - 3S40*		12
Single Phase	Single Phase	Quantity of Single Circuits
D2Z A106 - 2S40*	D2Z A106 - 2SF40*	6
D2Z A108 - 2S40*		8
D2Z A110 - 2S40*		10
D2Z A112 - 2S40*		12

*See page 661 to complete catalog number.

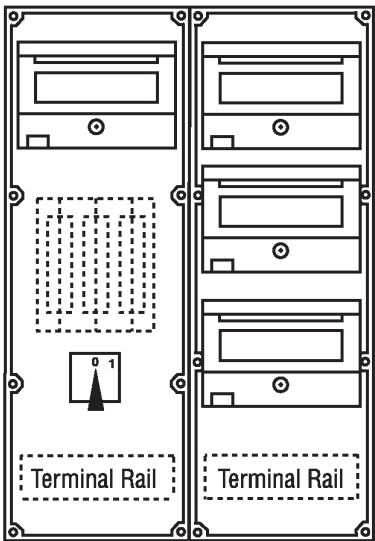
Panels Type B, C, and D



Step 4: Conduit/Cable Entries

Determine if additional entries are required on sides B and C. All panels are supplied with bottom entries (Side A), 1 main supply and remainder as branches.

Example: Size D panels with disconnect switch have 1 main supply and 3 branch plates as standard.



Main Entries

Type	Entries	Location
Main Supply	(1) 2" + (3) 1"	A (Standard)
Branches	(9) 3/4" (B panel)	A (Standard)
	(18) 3/4" (C panel)	A (Standard)
	(27) 3/4" (D panel)	A (Standard)
Branches	(9) 3/4"	B (Optional) left side
	(9) 3/4"	C (Optional) left side

Terminal Wiring

Supply Circuits			Branch Circuits		
Amperage	mm²	AWG	Amperage	mm²	AWG
40	16	6-18	10	4	12-22
80	35	2-6	15	4	12-22
125	70	8-2/0	20	10	6-14
180	95	6-3/0	40	16	6-18

D2Z Panelboards Zone 1, Division 2

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

1A

Non-metallic or Stainless Steel

How to Build a Catalog Number†

Panel Family	Quality Branch Panels	Phase	Circuits	Quantity poles/amps*	Main	Branch Entries
D2Z	C	3	40EAX	*06340	-3SF125	-S848 -BC

**Class I, Div. 2, Groups A, B, C, D;
Zone 1, AEx & Ex de IIC panelboards**

**Panel Type – see step 3
(No. of enclosures) (A, B, C, or D)**

1 – single-phase 3 – 3-phase

Circuit Breaker Total: (see Step 1 details)
 (12) single-pole = 12 circuits
 + (6) three-pole = 18 circuits
 + (2) single-pole EPD = 4 circuits
 + (5) single-pole = 5 circuits
 w/ Aux contacts 39 circuits → **40 circuits**
 If an odd number, round up to an even number.

Add suffix if included: **E** for EPD, **AX** for auxiliary contacts, **SC** for signal contacts, **K** for MOVs and portable power

Note: Maximum number of devices per window: (6) 1-pole devices; (4) 2-pole devices; (3) 3-pole devices or combinations of each, where a 3-pole device = (3) 1-pole devices, and a 2-pole device = (2) 1-pole devices

Choose Circuit Breakers (2, 6, 10, 16, 20, 25, 32 or 40 Amp)†
 (3-pole first – Options, then 2-pole then single-pole)
 a. Insert Asterisk*
 b. Quantity is 6: **06**
 (if less than 10, insert 0 before quantity)
 c. Three-pole: **3**
 d. Ampere Rating : **40** (if less than 10, insert 0 before amperage)
 (max 40 amperes for 240VAC; max 25 amperes for 480VAC)
 Options “E” for EPD
 “AX” for auxiliary contacts
 “SC” for signal contacts
 “K” for MOVs and portable power, 480 VAC only

Select disconnect switch (see Step 2 details) if required
 (3-phase, 4-pole Main Switch, Fused, 125 A)

480 VAC, 10 kAIC Circuit Breakers – S848

Branch Entries
 (Side A [bottom] standard)
 B – Side B left side
 C – Side C right side

Example Order Number: D2Z C 3 40EAX * 06340 * 12120 * 02120E * 05110AX-3SF125-BC

(6) 3-pole/40A = ***06340**
 (12) single-pole/20A = ***12120**
 (2) single-pole/20A EPD = ***02120E**
 (5) single-pole/10A = ***05110AX**
 w/Aux contacts

For other panels or options, consult factory

‡ For a D2Z panelboard with 316 stainless steel enclosure, add suffix “S860” to catalog number

† Max of 25 amperes for 480VAC UL489 branch circuit breakers

1A

D2Z Panelboards Zone 1, Division 2

Non-metallic or Stainless Steel

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 1, Group IIC
Cl. II, Div. 1, Groups E, F, G

AEx de II C T4, T6
Ex de IIC T4, T6
NEMA 4X, IP65

Spare Component Information

Lighting Circuits Order Code
10k AIC, max. 480 VAC



1-pole
6/window
SIA 001



2-pole
4/window
SIA 002



3-pole
3/window
SIA 003



4-pole
2/window
SIA 004

Heat-Tracing Order Code
EPD with 10k AIC, 30mA leakage, max. 480 VAC



1-pole + N
4/window
FSS 002



2-pole
2/window
FSS 004

Please state rated current on order:
2, 6, 10, 16, 20, 25, 32 or 40A.*

Optional:

Auxiliary contact – SAH 001
Signal contact – SAS 001 (in the case of branch breakers with signal contacts, the next largest component size is used)

Example:

SIA 001-20 – SAH001
Single Pole, 20A with auxiliary contacts

Please state rated current on order:
6, 10, 16, 20, 25, 32 or 40A.

Optional:

With auxiliary contact – FSH 001
With signal contact in Size 4 component – FSS001

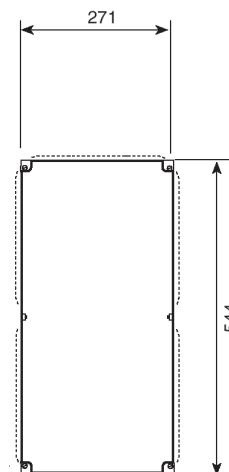
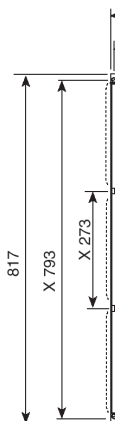
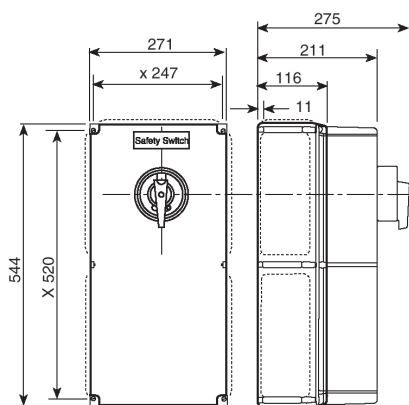
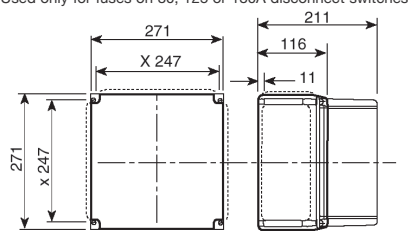
Example:

FSS 004 - 30 – FSS001
EPD, 30A, 30mA with signal contact

*25 ampere max. for 480VAC breakers.

Dimensions

Used only for fuses on 80, 125 or 180A disconnect switches



Used only for fuses on 80, 125 or 180A disconnect switches without fuses.

Dimensions in mm X = mounting dimensions

Used for
– 40A switch with fuses and 1 window or
– 40A switch and 2 windows, or
– 3 windows of branch breakers.

D2PB Division 2 Circuit Breaker Panelboards

Factory Sealed, Single & Two-Pole Circuit Breakers

Cl. I, Div. 2, Groups C, D
NEMA 3, 7CD (Div. 2), 12
Dust-tight
Raintight

Wet Locations

1A

Applications:

D2PB panelboards are designed specifically for use:

- In Class I, Division 2, Groups C, D hazardous areas where flammable vapors or gases may be present due to accident or abnormal locations
- In damp, wet or corrosive locations
- Indoors or outdoors in Division 2 areas of petroleum refineries, chemical and petrochemical plants, and other process industry facilities

For general application, circuit breaker and wiring system information, see pages 626-629.

Features:

- Enclosures are of external flange design, which makes the interior completely accessible when the cover is removed
- Provided with concealed mounting, which is made possible by having four clearance holes for lag screws or mounting bolts in the back of the enclosure, one in each corner
- The interior sub-assembly, consisting of a mounting plate, main terminal blocks, and circuit breakers, is removable as a complete unit
- Ample gutter space is provided for ease of field wiring
- Circuit breakers are contained in compact, individual factory sealed enclosures suitable for Class I, Division 2, Groups C, D hazardous areas. The individual enclosures are easily removed and replaced, therefore changing or adding individual circuit breakers will not present a problem
- The main cover, which is gasketed to exclude dirt and moisture, is attached to the body with hex head bolts and is removed only when installing the panelboard or making wiring changes. In the center of the main cover is a gasketed hinged door, which provides access only to the circuit breaker operating handles, and is held closed by two quick release catches. The door can be locked by as many as 3 padlocks to prevent unauthorized operation
- Tapped conduit openings are provided for main conduit and branch circuits, as shown in the dimensional information. Standard openings can be reduced or plugged to meet most installation requirements
- Circuit breakers are arranged in two vertical rows and have the circuit numbers marked on the handles. The left row is numbered 1, 3, 5, 7, etc. and the right row 2, 4, 6, 8, etc. Identifying information may be typed on the circuit directory card attached to the inside of the hinged door

Certifications and Compliances:

- NEC:
Class I, Division 2, Groups C, D
- NEMA: 3, 7CD (Division 2), 12
- UL Standard: 67, 877

Standard Materials:

- Bodies, covers and hinged doors – copper-free aluminum
- Breaker operating handles – type 6 / 6 nylon
- Interior parts – sheet steel

Standard Finishes:

- Copper-free aluminum – natural
- Type 6 / 6 nylon – natural (black)
- Sheet steel – electrogalvanized with chromate finish

Options:

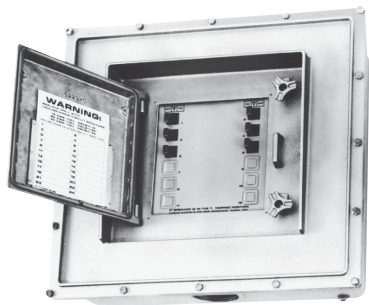
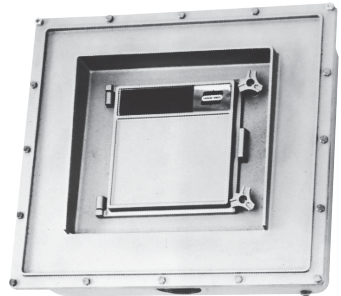
Description:

- Panelboard provided with operating handle lockouts for lockout in ON or OFF positions. Stainless steel lockout frame integral to panel faceplate.
D2PB Size 1..... L12
D2PB Size 2..... L24
- Branch conduit entries furnished with Eaton's Crouse-Hinds type PLG plugs..... S822
- Square head plugs in all openings.... S872
- Branch circuit conduit openings located at bottom instead of at top.. INV
- Drilled and tapped conduit openings other than standard – available on special order – specify.. I
- Breather and drain..... DV
- Circuit breaker operating handle lockout - order D2PB02
- Assortment of single-pole and two-pole circuit breakers and trip ratings – see listings.

Wiring system other than those listed – See page 628

Suffix:

Specify



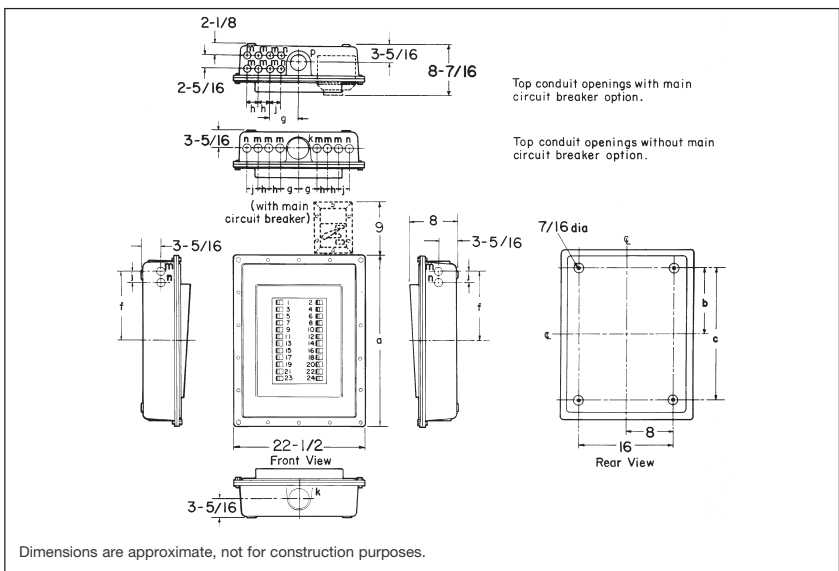
Size Ranges:

Panel Size	Max. No. of Breakers	
	Single-Pole	Two-Pole
1	12	6
2	24	12

Electrical Rating Ranges:

- Circuit breakers
- Single-pole – 120/240VAC max.
- Two-pole – 120/240VAC max.
- Trip ratings – 15, 20 and 30 amp

Dimensions In Inches:



Crouse-Hinds

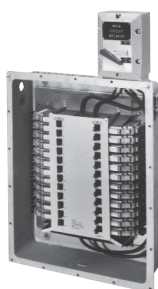
by EATON

D2PB Division 2 Circuit Breaker Panelboards

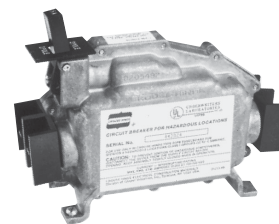
Factory Sealed, Single & Two-Pole
Circuit Breakers

Cl. I, Div. 2, Groups C, D
NEMA 3, 7CD (Div. 2), 12
Dust-tight
Raintight

Wet Locations



D2PB with Main Breaker Option



D2CB12-20

Replacement Circuit Breaker Assemblies

Where D2PB (and N2PB) panelboards have been ordered with less than the maximum number of circuit breakers, breakers can easily be added in the field. Circuit breaker assemblies for field addition or replacement are listed below; they consist of the breaker itself in its factory sealed Class I, Division 2, Groups C, D enclosure, and necessary mounting hardware. These assemblies are not suitable for use as individually mounted units.

Circuit Breaker Assemblies

Ampere Rating	Single-Pole Cat. #	Two-Pole Cat. #
15	D2CB11 15	D2CB12 15
20	D2CB11 20	D2CB12 20
30	D2CB11 30	D2CB12 30

Ordering Information:

Panelboards are available with single-pole and two-pole, 15, 20, or 30 ampere circuit breakers. To order a panelboard with all breakers of the same rating, add the desired rating as a suffix to the Cat. No. For example, the 12 circuit D2PB1512 panelboard with all the circuit breakers rated at 20 amperes would be ordered as D2PB1512-20.

Panelboards shown below can also be furnished with an assortment of single-pole and two-pole breakers and breaker ampere ratings. To order, the quantities of breakers and ampere ratings are added as a suffix to the Cat. No. The total number of poles will determine the panel size (24 poles maximum), and the wiring systems must be compatible when combining single- and two-pole circuit breakers. For example, a typical D2PB panelboard with a combination of 3 single-pole 15 ampere, 3 single-pole 20 ampere, 2 single-pole 30 ampere, 4 two-pole 20 ampere, and 4 two-pole 30 ampere circuit breakers would be ordered as D2PB2508-315-320-230-808-420-430. The total number of poles is 24 and wiring systems 5 and 8 are compatible 4 wire, 3 phase.

The D2PB with a main breaker is available up to 100 amps. To order D2PB with main breaker, add the appropriate suffix. Example: D2PB1512-15 with three-pole, 100 amp main circuit breaker would be ordered as D2PB1512-15-3M100. If two-pole main is required, change the number 3 to 2. If a lower trip rating than 100 is required, the suffix will change accordingly.

Max. No. of Breakers				Single-Pole Circuit Breakers		Two-Pole Circuit Breakers	
Single-Pole Pole	Two-Pole Pole	Panel Size	Main Lug Size†	Wiring System 4* Mains: 3-Wire Branches: 2-Wire Solid Neutral Cat. #	Wiring System 5* Mains: 4-Wire, 3-Phase Branches: 2-Wire Solid Neutral Cat. #	Wiring System 3* Mains: 3-Wire Branches: 3-Wire Solid Neutral Cat. #	Wiring System 8* Mains: 4-Wire, 3-Phase Branches: 3-Wire, 1-Phase Solid Neutral Cat. #
6				D2PB1406 ①	D2PB1506 ①		
8	4	1	1 / 0	D2PB1408 ①	D2PB1508 ①	D2PB1304 ①	D2PB1804 ①
10	5			D2PB1410 ①	D2PB1510 ①	D2PB1305 ①	D2PB1805 ①
12	6			D2PB1412 ①	D2PB1512 ①	D2PB1306 ①	D2PB1806 ①
12	6			D2PB2412 ①	D2PB2512 ①	D2PB2306 ①	D2PB2806 ①
14	7			D2PB2414 ①	D2PB2514 ①	D2PB2307 ①	D2PB2807 ①
16	8			D2PB2416 ①	D2PB2516 ①	D2PB2308 ①	D2PB2808 ①
18	9	2	4 / 0	D2PB2418 ①	D2PB2518 ①	D2PB2309 ①	D2PB2809 ①
20	10			D2PB2420 ①	D2PB2520 ①	D2PB2310 ①	D2PB2810 ①
22	11			D2PB2422 ①	D2PB2522 ①	D2PB2311 ①	D2PB2811 ①
24	12			D2PB2424 ①	D2PB2524 ①	D2PB2312 ①	D2PB2812 ①

①Add ampere rating. See ordering information.

†1/0 lug, rated 125 amps. takes wire sizes #6 to 1/2; 1/2 lug, rated 225 amps. takes wire sizes 1/2 to 3/4.

*For description of these standard wiring systems, see page 628.

Dimensions

Overall and Mounting Dimensions (In.)			Conduit Openings Spacing (In.)				Size (In.)		Quantity		
a	b	c	f	g	h	j	k	m	n	p	Main Branches
Panel Size Without Main C.B.											
1	20 3/4	8	16	7 3/4	3 1/2	2	3	1 1/4			2 8
2	28 3/4	11 3/4	23 1/2	11 3/8	3 7/16	1 15/16	3	1 1/4	1 1/4		2 12
Panel Size With Main C.B.											
1	20 3/4	8	16	7 3/4	5	1 15/16		1 1/4		2 1/2	2 8
2	28 3/4	11 3/4	23 1/2	11 3/8	5	1 15/16		1 1/4	1 1/4	2 1/2	2 12

Ⓜ Conduit opening "n" not supplied on panel size 1.

Crouse-Hinds
by **Eaton**

D2PB, D2L, D2D Circuit Breaker Panelboard Assemblies

with Transformer

Cl. I, Div. 2, Groups B†, C, D
NEMA 3, 4‡, 7B†CD (Div. 2), 12
Wet Locations
Watertight‡

1A

Applications:

D2PB, D2L, D2D circuit breaker panelboard assemblies with transformers are for use:

- In Class I, Division 2, Group C, D hazardous areas where, due to accident or abnormal operations, flammable vapors or gases may be present, and which are subject to weather, dampness and corrosion
- Indoors or outdoors in Division 2 areas such as petroleum refineries, chemical and petrochemical plants, and other process industry facilities
- Where high voltage supply must be stepped down to the lower voltage necessary to serve lighting, heating, appliance, heat tracing, motor and similar circuits

For general information on panelboard applications, circuit breakers and wiring systems, see pages 626–629.

Features:

- The factory assembled panelboard and transformer are on one compact frame, suitable for either wall or pole mounting. Wiring between the transformer secondary and main lugs of the panelboard is accomplished at the factory.
- Easy to install and wire. The main feed is connected to the transformer primary and the branch circuits are wired to the panelboard terminal blocks.
- The assembly can be installed in the load area to reduce the length of runs of low voltage branch circuits.
- Panelboards used are standard D2PB, D2L, or D2D units with circuit breakers listed in this section.
- Transformers are compound filled or epoxy filled to completely seal out moisture and dirt.

Certifications and Compliances:

- NEC/CEC:
Class I, Division 2, Group B†, C, D
- NEMA/EEMAC: 3, 4‡, 7B†CD (Division 2), 12
- UL Standard: 67, 1604
- CSA Standard: C22.2 No. 213

Standard Materials:

- Frames – structural aluminum
- Mounting hardware – stainless steel
- Transformer enclosure – sheet steel, welded
- For panelboard materials, see individual listing pages

Standard Finishes:

- Aluminum – natural
- Stainless steel – natural
- Sheet steel – primed and painted
- For panelboard finishes, see individual listing pages

Options:

- Material – structural steel frames
- Finish – primed and painted or hot dip galvanized
- For options available on the panelboards themselves, see individual listings pages

Size Ranges:

Transformers

Single or three-phase – 5kVA to 30kVA

Panelboards

Max. No. of Breakers

	Single-pole	Two-pole	Three-pole
D2PB	24	12	
D2L	42	20	14
D2D	30	14	10

Electrical Rating Ranges:

- Transformers – 480 volt primary
- Transformers – 120 / 240 volt secondary
- Panelboards – see individual listings

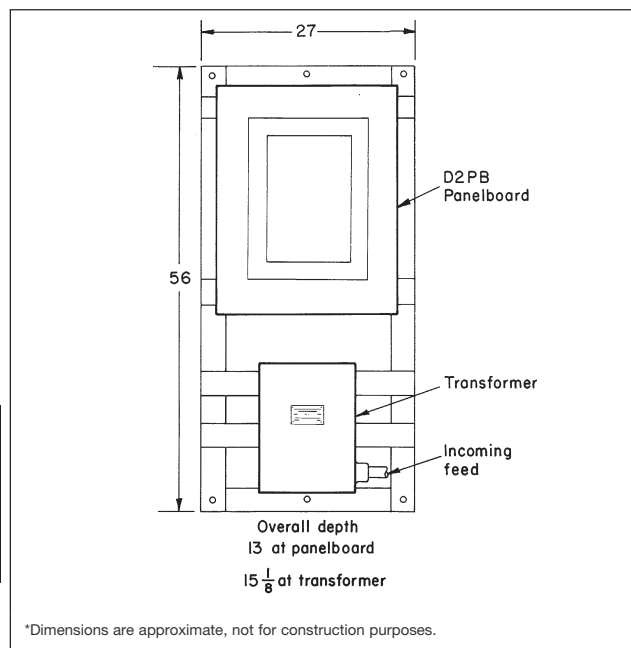
† D2L, D2D with GB suffix and breather and drain holes plugged.
‡ NEMA 4 hoesetight with breather and drain openings plugged.

1A D2PB, D2L, D2D Circuit Breaker Panelboard Assemblies with Transformer

Cl. I, Div. 2, Groups B†, C, D
NEMA 3, 4‡, 7B†CD (Div. 2), 12
Wet Locations
Watertight‡

Typical Assembly*

24 Circuit D2PB panelboard with single-phase transformer



Ordering Check List

1. Select the D2PB, D2L, D2D panelboard required, together with any applicable options or special features. See individual listing pages.

Cat. No. _____

2. Provide the following information, necessary for selection of the correct transformer:

Primary voltage _____

Secondary voltage _____

kVA rating _____

Taps – number and percent _____

Frequency (60 cycle unless otherwise specified) _____

Single or three-phase _____

Other requirements _____

† D2L, D2D with GB suffix and breather and drain holes plugged.

‡ NEMA 4 hoesetight with breather and drain openings plugged.

GUSC Circuit Breaker Load Centers

with Quicklag® Circuit Breakers

Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

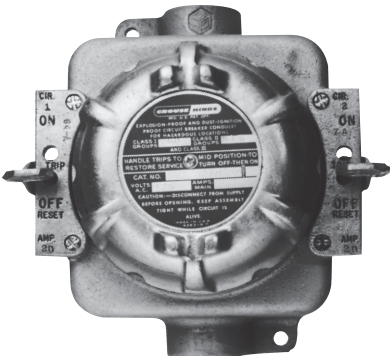
1A

Applications:

GUSC circuit breaker load centers are used in:

- Areas which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts, and which are subject to weather, dampness and corrosion
- Indoors or outdoors at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist

For general application and circuit breaker information, see pages 626–627.



Features:

- Compact rectangular enclosures with round threaded covers
- External operating handles can be padlocked in either "ON" or "OFF" positions
- Not furnished with internal wiring as field wiring connections are made directly to circuit breaker line and load terminals. To meet varying grounding requirements, an insulated neutral terminal block is provided and is equipped with a removable grounding jumper
- Bodies have 1" vertical throughfeed hubs

Certifications and
Compliances:

- NEC:
 - Class I, Div. 1 & 2, Groups B†, C, D
 - Class II, Div. 1, Groups E, F, G
 - Class II, Div. 2, Groups F, G
 - Class III
- NEMA: 3, 7BCD, 9EFG, 12
- UL Standard: 1203

Standard Materials:

- Bodies – *Feraloy*® iron alloy
- Covers and operating handles – copper-free aluminum
- Operating shafts – stainless steel
- Interior parts – sheet steel

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural
- Sheet steel – electrogalvanized with chromate finish

Size Ranges:

Max. No. of Breakers	
Single-pole	Two-pole
2	1

Electrical Rating Ranges:

- Quicklag circuit breakers: single-pole, 240VAC max.; two-pole, 240VAC max.
- Trip ratings: 10, 15, 20, 30 and 40 amp.

Options:

The following special options are available from factory by adding suffix to Cat. No.:

Description	Suffix
• Breather and drain (Class I and Class II).....	S198V
• Breather and drain (Class I and Class II, Groups F, G).....	S454V
• Assortment of single and two-pole circuit breakers and trip ratings.....	Specify

†See listings for catalog numbers which are suitable for use in Group B hazardous locations. Seals must be installed within 1½" of all conduit openings. Quicklag is a registered trademark of Cutler-Hammer Inc.

1A

1A

GUSC Circuit Breaker Load Centers

with Quicklag® Circuit Breakers

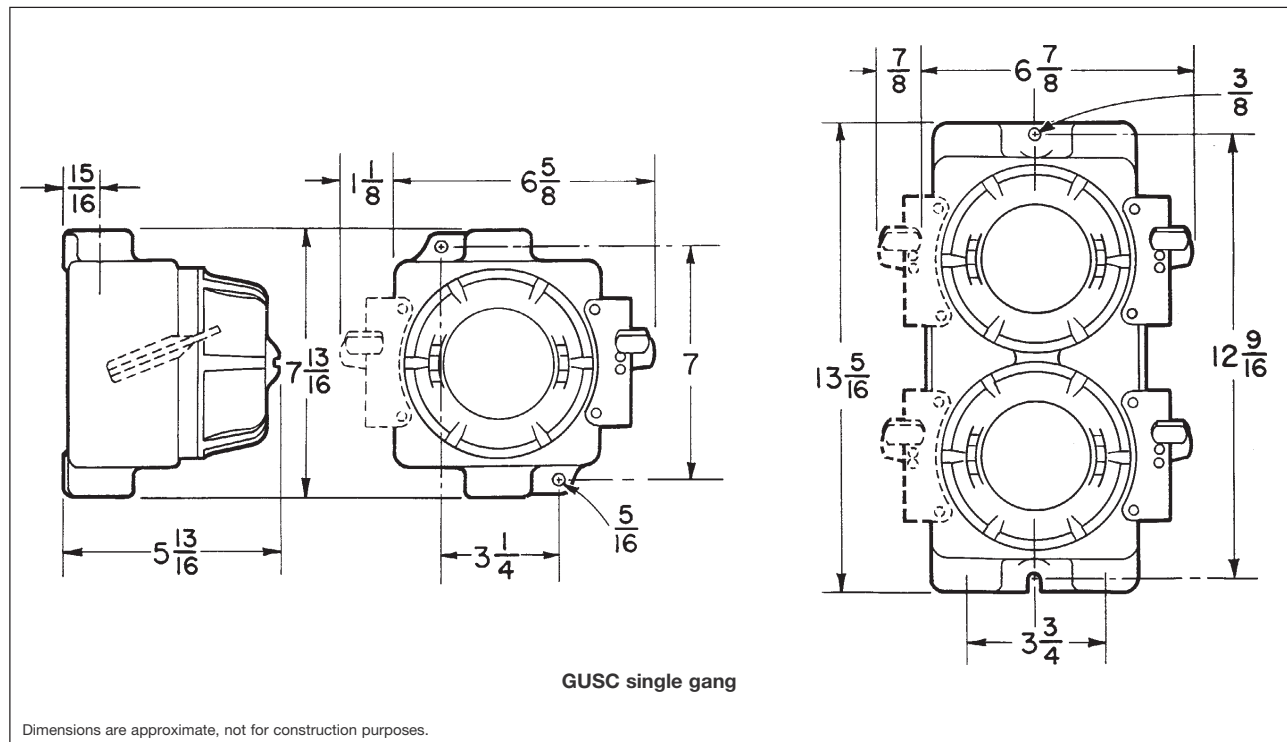
Cl. I, Div. 1 & 2, Groups B†, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Circuit Breaker Information			Load Center With Circuit Breaker		
No. of Breakers	Poles	Ampere Rating	Hub Size	Standard Units Cat. #	Group B Units Cat. #
1	1	10	1	GUSC3110 10	GUSC3110 10 GB
		15	1	GUSC3110 15	GUSC3110 15 GB
		20	1	GUSC3110 20	GUSC3110 20 GB
		30	1	GUSC3110 30	GUSC3110 30 GB
		40	1	GUSC3110 40	GUSC3110 40 GB
2	1	10	1	GUSC3210 10	GUSC3210 10 GB
		15	1	GUSC3210 15	GUSC3210 15 GB
		20	1	GUSC3210 20	GUSC3210 20 GB
		30	1	GUSC3210 30	GUSC3210 30 GB
		40	1	GUSC3210 40	GUSC3210 40 GB
1	2	10	1	GUSC3120 10	GUSC3120 10 GB
		15	1	GUSC3120 15	GUSC3120 15 GB
		20	1	GUSC3120 20	GUSC3120 20 GB
		30	1	GUSC3120 30	GUSC3120 30 GB
		40	1	GUSC3120 40	GUSC3120 40 GB

Dimensions

In Inches:



Dimensions are approximate, not for construction purposes.

†See listings for catalog numbers which are suitable for use in Group B hazardous locations. Seals must be installed within $1\frac{1}{2}$ " of all conduit openings.
Quicklag is a registered trademark of Cutler-Hammer Inc.

N2PB Circuit Breaker Panelboards

Factory Sealed Single & Two-Pole Breakers

Cl. I, Div. 2, Groups C, D
Cl. II, Div. 2, Groups F, G
Corrosion-Resistant
Dust-tight
NEMA 3, 7CD (Div. 2), 9FG (Div. 2), 12

Watertight†
Weatherproof

1A

Applications:

- N2PB panelboards are for use in central control and protection of a large number of feeder or branch circuits and for housing circuit breakers in Class I, Division 2, Groups C & D hazardous areas.

Features:

- Enclosures are made of *Krydon*®, Eaton's Crouse-Hinds' high impact strength fiberglass-reinforced polyester material with excellent corrosion resistance and stability to heat
- Enclosure access door provided with stainless steel thumb screws for easy access; access door may be padlocked to prevent unauthorized access
- Circuit breakers are contained in compact, individual factory sealed enclosures suitable for Class I, Division 2, Groups C, D hazardous areas

Certifications and Compliances:

- NEMA 3, 7CD (Div. 2), 9FG (Div. 2), 12
- NEC:
 - Class I, Division 2, Groups C, D
 - Class II, Division 2, Groups F, G

Options:

- | Description | Suffix |
|--|--------|
| Panelboard provided with (12) operating handle lockouts for lockout in ON or OFF positions (any circuit). Stainless steel lockout frame integral to panel faceplate. | |
| N2PB Size 14 x 26 | L12 |
| N2PB Size 24 x 26 | L24 |
| Circuit breaker operating handle lockout - order D2PB02 | |
| Assortment of single-pole and two-pole circuit breakers and trip ratings - see listings | |
| Grounding plate or bushing - see page 677 | |
| Replacement circuit breaker assemblies - see page 627 | |



Circuit breaker panelboard - open view

Electrical Rating Ranges:

- Circuit breakers
- Single-pole - 120/240VAC max.
- Two-pole - 120/240VAC max.
- Trip ratings - 15, 20 and 30 amp.

Size Ranges:

Panel Designation	Max. No. of Breakers	
	Single-Pole	Two-Pole
N2PB1426	12	6
N2PB2426	24	12

†Watertight, weatherproof with door closed.

1A N2PB Circuit Breaker Panelboards

Factory Sealed Single & Two-Pole Breakers

Cl. I, Div. 2, Groups C, D
Cl. II, Div. 2, Groups F, G
Corrosion-Resistant
Dust-tight
NEMA 3, 7CD (Div. 2), 9FG (Div. 2), 12

Watertight†
Weatherproof

Ordering Information

Panelboards are available with 15, 20 or 30 ampere circuit breakers. To order a panelboard with all breakers of the same rating, add the desired rating as a suffix to the Cat. No. For example, the 12 circuit N2PB2426-2512 panelboard with all the circuit breakers rated 20 amperes would be ordered as N2PB2426-2512-20.

Panelboards listed below can also be furnished with an assortment of single-pole and two-pole breakers and breaker ratings. To order, the quantities of breakers and ampere ratings are added as suffixes to the Cat. No. The total number of poles will

determine the panel size (24 poles max.), and the wiring systems must be compatible when combining single- and two-pole circuit breakers.

For example, a typical N2PB panelboard with a combination of 5 single-pole 20 ampere, 3 single-pole 30 ampere, and 4 two-pole 30 ampere breakers would be ordered as N2PB2426-2508-520-330-804-30. The total number of poles is 16 and wiring systems 25 and 8 are compatible 4 wire, 3 phase. The N2PB with a main breaker is available up to 100 amps. N2PB with main breaker, add appropriate suffix.

Example: N2PB2426-2512-15 with three-pole, 100 amp main circuit breaker would be ordered as N2PB2426-2512-15-3M100. If two-pole main is required, change the number 3 to 2. If a lower trip rating is required, the number will change accordingly. Main breaker housing is positioned on top of panel similar to D2PB main. (See Section 1A.)

					Enclosures with Single-Pole Circuit Breakers		Enclosures with Two-Pole Circuit Breakers	
Max. No. of Breakers		Panel Size	Enclosure Only Cat. #*	Main Lug Size	Wiring System 24 Mains: 3-Wire	Wiring System 25 Mains: 4-Wire, 3-Phase	Wiring System 3 Mains: 3-Wire	Wiring System 8 Mains: 4-Wire, 3-Phase
1 Pole	2 Poles				Branches: 2-Wire	Branches: 2-Wire, 1-Phase	Branches: 3-Wire	Branches: 3-Wire, 1-Phase
					Solid Neutral	Solid Neutral	Solid Neutral	Solid Neutral
					Cat. #†	Cat. #†	Cat. #†	Cat. #†
6		14 x 26 x 8½	N2PB1426	1 / 0	N2PB1426 2406 ①	N2PB1426 2506 ①	N2PB1426 304 ①	N2PB1426 804 ①
8	4				N2PB1426 2408 ①	N2PB1426 2508 ①	N2PB1426 305 ①	N2PB1426 805 ①
10	5				N2PB1426 2410 ①	N2PB1426 2510 ①	N2PB1426 306 ①	N2PB1426 806 ①
12	6				N2PB1426 2412 ①	N2PB1426 2512 ①		
12	6	24 x 26 x 8½	N2PB2426	4 / 0	N2PB2426 2412 ①	N2PB2426 2512 ①	N2PB2426 306 ①	N2PB2426 806 ①
14	7				N2PB2426 2414 ①	N2PB2426 2514 ①	N2PB2426 307 ①	N2PB2426 807 ①
16	8				N2PB2426 2416 ①	N2PB2426 2516 ①	N2PB2426 308 ①	N2PB2426 808 ①
18	9				N2PB2426 2418 ①	N2PB2426 2518 ①	N2PB2426 309 ①	N2PB2426 809 ①
20	10				N2PB2426 2420 ①	N2PB2426 2520 ①	N2PB2426 310 ①	N2PB2426 810 ①
22	11				N2PB2426 2422 ①	N2PB2426 2522 ①	N2PB2426 311 ①	N2PB2426 811 ①
24	12				N2PB2426 2424 ①	N2PB2426 2524 ①	N2PB2426 312 ①	N2PB2426 812 ①

Note on Hubs: Hubs must be ordered separately. See page 677 for listing.

① Add ampere rating. See ordering information above.

† Watertight, weatherproof with door closed.

‡ See page 677 for wiring diagrams.

*Accommodates D2CB breakers. Includes complete interiors, wiring system must be specified. Example: N2PB2426 with wiring system 25 would be ordered as N2PB2426-25.

N2PB Circuit Breaker Panelboards

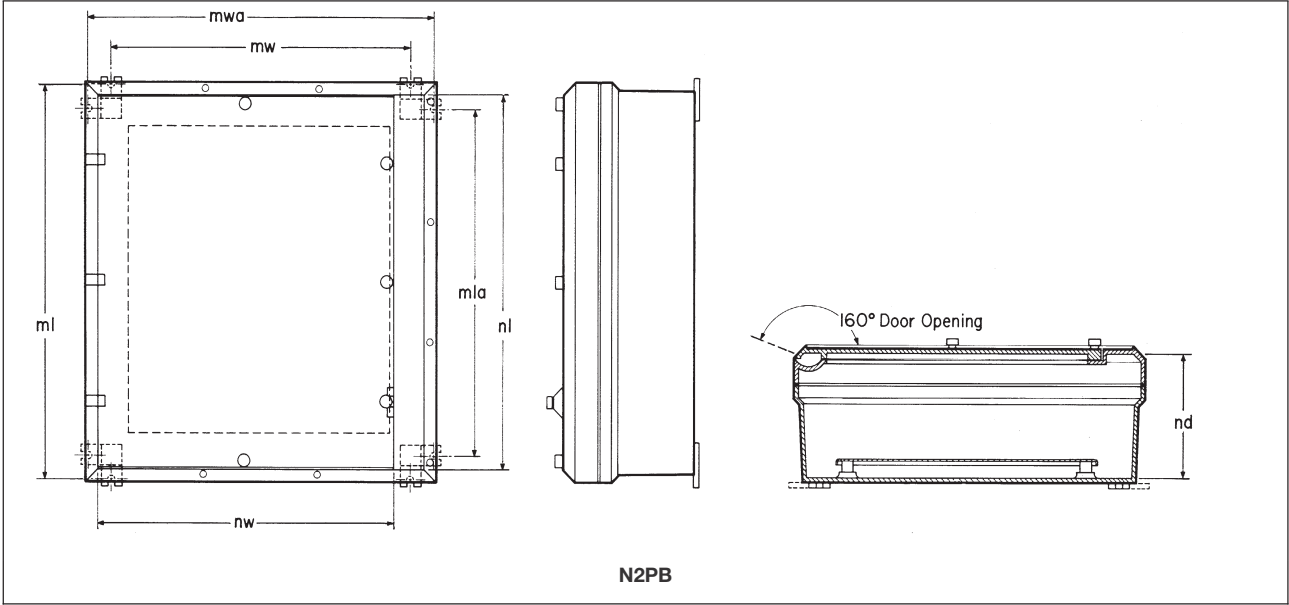
Cl. I, Div. 2, Groups C, D
Cl. II, Div. 2, Groups F, G
Corrosion-Resistant
Dust-tight
NEMA 3, 7CD (Div. 2), 9FG (Div. 2), 12

Watertight†
Weatherproof

1A

Factory Sealed Single & Two-Pole Breakers

Dimensions
In Inches:



Cat. #	Nominal Inside Dimensions			Door Opening Dimensions		Mounting Dimensions		Alternate Mounting Dimensions	
	nw	nl	nd	dw	dl	mw	ml	mwa	mla
N2PB1426	14	26	8 1/2	9 11/16	23 11/16	11 7/8	27 1/4	15 3/8	23 3/4
N2PB2426	24	26	8 1/2	19 11/16	23 11/16	21 3/4	27 1/4	25 1/4	23 3/4

Not to be used for construction purposes unless approved.

† Watertight, weatherproof with door closed.

1A XLPB Industrial Panelboards

NEMA 1, 3, 3R, 4, 4X, 12
NEMA PB1
UL/cUL Listed

Applications:

XLPB Industrial Panelboards are used / installed:

- In areas made corrosive due to the presence of chemicals, salt water, and/or moisture
- In locations where rough usage, moisture, dust, dirt, and corrosion are a problem
- In areas subject to weather, dampness, or wash down requirements
- To provide, in one compact unit, a centrally controlled switching system for a large number of feeder or branch circuits
- For branch power distribution and circuit protection of motors, valves, pumps, lighting, heat tracing, receptacles, etc.
- In indoor and outdoor installations
- To house thermal-magnetic circuit breakers that provide disconnect means, short circuit protection, and thermal time delay overload protection



XLPB Panelboard Closed



XLPB Panelboard Open

Features and Benefits:

- Heavy-duty welded mounting feet provide ease of installation (customer can easily support the panel with bottom mounting feet, while fastening the top feet)
- High quality foam-in-place gasket prevents ingress of water and corrosive agents, reducing panel failure due to moisture/corrosion
- An integral drainage channel allows for opening the panel door without moisture or dust seeping into panel from the top side of the enclosure
- An internal/external ground stud assembly enables rapid and reliable protective ground connection
- Industrial grade NEMA 4X panel designed for harsh environments provides long product life

Standard Materials & Finishes:

- 316L stainless steel or painted sheet steel
- Eaton Pow-R-Line™ chassis
- Eaton Cutler-Hammer™ circuit breakers
- Stainless steel hardware
- High integrity foam-in-place gasket
- Industrial laminate insulate dead-front cover
- SS316 quarter-turn screw driver entry standard

Electrical Ratings:

- 120/208, 240, 277/480, 480, and 347/600, 600 voltage panels
- 100 and 225 amp rated chassis
- Isolated neutral and ground bars
- Main breakers up to 225 amps
- 12, 18, 24, and 42 circuit panels
- 10kAIC

Panel Capacity:

				120/208V (3P 4W) 120/240V (1P 3W) 277/480V (3P 4W)* 347/600V (3P 4W) CSA ONLY	480V (3P 3W) 277/480V (3P 4W) 600V (3P 3W) 347/600 (3P 4W)	
<hr/>						
Panel Size	With Main Lug	2-Pole	3-Pole	Main Capacity	Main Capacity	Available w/GFI/EPD Branch Protection
A	12	10	9	Up to 100 Amp	Up to 225 Amp	Up to 240V*
B	18	16	15	Up to 100 Amp	Up to 225 Amp	Up to 240V*
C	24	22	21	Up to 100 Amp	Up to 225 Amp	Up to 240V*
D	42	40	39	Up to 100 Amp	Up to 225 Amp	Up to 240V*

Certifications and Complies:

- NEMA 1, 3, 3R, 4, 4X, 12
- NEMA PB1
- UL508A Listed / cUL Certified (CAN/CSA C22.2, No. 14) (UL File E246968)
- UL67 components
- UL489/CAN/CSA C22.2, No. 5 circuit breakers

*277V EPD Branch Protection potentially available - single phase only (requires 2 breaker spaces)

Ordering Information:

Example:

- NEMA 4X stainless steel
- 120/208 VAC 3-phase
- (8) 1-pole, 20 amp circuit breakers
- 3-pole, 100 amp main
- Bottom entry (inverted)

Example would be ordered as:

XLPB

A

S

2

3

08

*08120

-3M100

-I

1. Panel Type

XLPB

2. Size Enclosure

A = 12 circuit panelboard

B = 18 circuit panelboard

C = 24 circuit panelboard

D = 42 circuit panelboard

3. Enclosure Material Type

S = stainless steel

P = painted steel

4. Voltage

2 = 120/208, 240

4 = 480/277, 480

6 = 347/600

5. Phase

1 = single phase

3 = 3 phase

6. Total Number of Branch Circuits

Refer to step 2 for maximum number of branch circuits per enclosure size.

Number of branch circuits equals combined number of branch circuit breaker poles - i.e. qty. (8) 1-pole, 20 amp breakers = 08 poles

Option: Ambient compensated breakers for 50°C, add suffix V after total number of branch circuits

7. Branch Breaker Series

*Quantity, Pole, Amp

*08120 = qty. (08), 1-pole, 20 amp circuit breakers

Option: For GFI circuit breakers, add suffix G after Total Number of Branch Circuits and Branch Breaker Series (ex. XLPBAS2308G*04120*04115G-3M100)

Option: For EPD circuit breakers, add suffix E after Total Number of Branch Circuits and Branch Breaker Series (ex. XLPBAS2308E*04120*04115E-3M100)

8. Main Breaker

2 or 3 pole, 15 to 225A

Example: 3M100 = 3-pole main breaker, 100 amp

9. Options (see Options Section for more information)

Breathers and drains

Gland plates

Bottom feed inverted panelboard

Enclosure access handles

Key entry door access

External operators

Lighting contactor



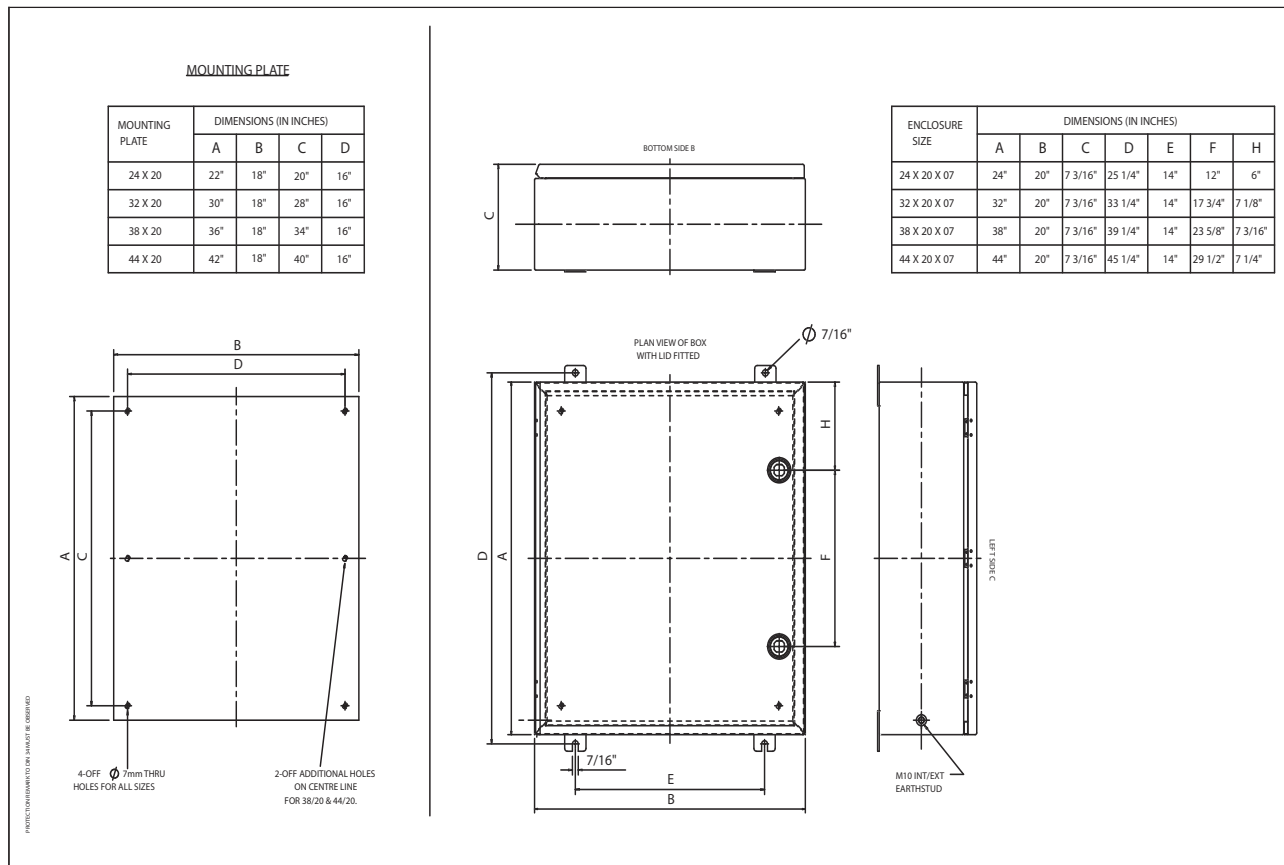
1A XLPB Industrial Panelboards

NEMA 1, 3, 3R, 4, 4X, 12
NEMA PB1
UL/cUL Listed

Options:

Description	Suffix	Where Added
Ambient compensated breakers for 50°C	V	After Total Number of Branch Circuits
GFI - 5mA ground fault protection	G	After Total Number of Branch Circuits and after specific Branch Breaker Series
EPD - 30mA equipment protection	E	After Total Number of Branch Circuits and after specific Branch Breaker Series
Breathers and drains to reduce moisture and corrosion	S756V	End of Catalog Number
Gland plates for ease of installation	GP	End of Catalog Number
Bottom feed inverted panelboard	I	End of Catalog Number
Enclosure access handles	HLD	End of Catalog Number
Key entry door access	KED	End of Catalog Number
External operators	Contact Factory	
Lighting contactor	Contact Factory	

Dimensions:



NLP Circuit Breaker Panelboards With QO® Breakers

Corrosion-Resistant
Dust-tight
Watertight*
Weatherproof
NEMA 3, 12

1A

Applications:

- NLP panelboards are for use in central control and protection of a large number of feeder or branch circuits and for housing circuit breakers.

Features:

- Enclosures are made of *Krydon*® high impact strength fiberglass-reinforced polyester material with excellent corrosion resistance and stability to heat
- Enclosure access door provided with stainless steel thumb screws for easy access
- Access door may be padlocked to prevent unauthorized access
- Standard with plug-on circuit breakers

Certifications and Complies:

- NEMA 3 and 12
- UL Standard: 67

Options:

- Assortment of circuit breaker trip ratings – specify
- Assortment of single, two and three-pole circuit breakers – specify
- Wiring system other than those listed – specify
- Ground fault interrupter – circuit breakers with built-in ground fault circuit interrupters can be provided. These interrupters cause the breaker to open when a ground fault occurs. Suffix "GFI" should be added after each circuit breaker rating to be supplied with ground fault interrupters

Electrical Rating Ranges:

- QO® circuit breakers, single or two-pole 120/240VAC; three-pole 240VAC
- Trip ratings:
 - 10 to 70 amps, single-pole
 - 10 to 70 amps, two-pole
 - 10 to 60 amps, three-pole
- Qwik-Gard® GFI circuit breakers:
 - Single-pole – 120 VAC 15 to 30 amps;
 - Two-pole – 120/240VAC 15 to 50 amps

Ordering Information:

Panelboards are available with 10, 15, 20, 25, 30, 35, 40, 45, 50, 60 or 70 ampere circuit breakers. To order a panelboard with all breakers of the same rating, add the desired rating as a suffix to the Cat. No. For example, the 12 circuit NLPQ1426-2512 with all circuit breakers rated 20 amperes would be ordered as NLPQ1426-2512-20.

Panelboards can be furnished with an assortment of breaker ratings. Where all circuit breakers have the same number of poles, assortments may be ordered by adding the quantities and ampere ratings as suffixes to the Cat. No. For example, the 12 circuit NLPQ1426-2512 with six 15 ampere, four 40 ampere and two 50 ampere single-pole circuit breakers would be ordered as NLPQ1426-2512-615-440-250.



Example: An NLPQ panelboard using wiring system 24 with four 15 ampere breakers, two 40 ampere and four 50 ampere breakers and two 15 ampere breakers, one 25 ampere breaker, and one 30 ampere breaker with GFI – Catalog No. NLPQ1426-2414-415-240-450-215GFI-125GFI-130GFI

Size Ranges:

Mains Rating	Max. No. of Branch Circuit Breakers					
	1-Pole		2-Pole		3-Pole	
	3w	4w	3w	4w	3w	4w
Panel Type Main Lug Only						
NLPQ1426 200A	24	30	12	14	–	10

Main Lug Only

3 Wire Branches (200A MLO)

			Enclosures with QON Interiors and QO® Branch Circuit Breakers	
No of Circuits	Enclosure Only	Main Lug† Amps	1-Pole Branch Circuit Breakers Wiring System 24†	2-Pole Branch Circuit Breakers Wiring System 3†
4	NLPQ1426 1	200	NLPQ1426 2404 ①	NLPQ1426 0304 ①
6	NLPQ1426 1	200	NLPQ1426 2406 ①	NLPQ1426 0306 ①
8	NLPQ1426 1	200	NLPQ1426 2408 ①	NLPQ1426 0308 ①
10	NLPQ1426 1	200	NLPQ1426 2410 ①	NLPQ1426 0310 ①
12	NLPQ1426 1	200	NLPQ1426 2412 ①	NLPQ1426 0312 ①
14	NLPQ1426 1	200	NLPQ1426 2414 ①	–
16	NLPQ1426 1	200	NLPQ1426 2416 ①	–
18	NLPQ1426 1	200	NLPQ1426 2418 ①	–
20	NLPQ1426 1	200	NLPQ1426 2420 ①	–
22	NLPQ1426 1	200	NLPQ1426 2422 ①	–
24	NLPQ1426 1	200	NLPQ1426 2424 ①	–

* Watertight, weatherproof with door closed.

① Insert branch circuit breaker rating desired 10, 15, 20, 25, 30, 35, 40, 45, 50, 60 or 70 amp.

† See page 677 for wiring diagrams.

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Crouse-Hinds

by **EATON**

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675

1A NLP Circuit Breaker Panelboards With QO® Breakers

Corrosion-Resistant
Dust-tight
Watertight*
Weatherproof
NEMA 3, 12

4 Wire Branches (200A MLO)

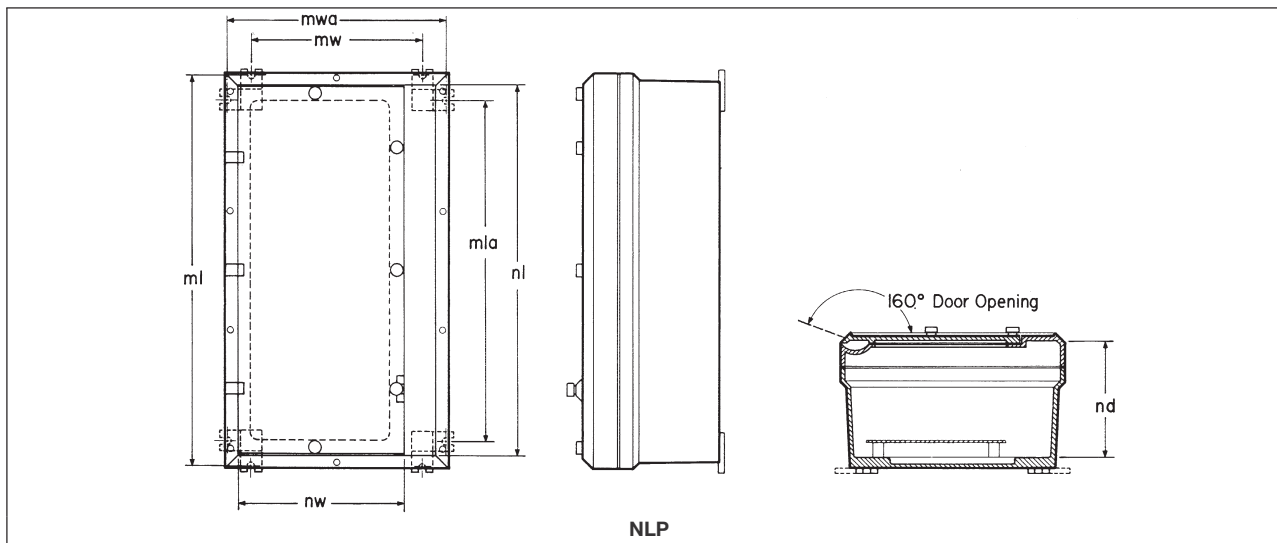
No of Circuits	Enclosure Only	Main Lug† Amps	Enclosures with QON Interiors and QO® Branch Circuit Breakers		
			1-Pole Branch Circuit Breakers Wiring System 25†	2-Pole Branch Circuit Breakers Wiring System 28†	3-Pole Branch Circuit Breakers Wiring System 11†
4	NLPQ1426 3	200	NLPQ1426 2504 ①	NLPQ1426 2804 ①	NLPQ1426 1104 ①
6	NLPQ1426 3	200	NLPQ1426 2506 ①	NLPQ1426 2806 ①	NLPQ1426 1106 ①
8	NLPQ1426 3	200	NLPQ1426 2508 ①	NLPQ1426 2808 ①	NLPQ1426 1108 ①
10	NLPQ1426 3	200	NLPQ1426 2510 ①	NLPQ1426 2810 ①	NLPQ1426 1110 ①
12	NLPQ1426 3	200	NLPQ1426 2512 ①	NLPQ1426 2812 ①	—
14	NLPQ1426 3	200	NLPQ1426 2514 ①	NLPQ1426 2814 ①	—
16	NLPQ1426 3	200	NLPQ1426 2516 ①	—	—
18	NLPQ1426 3	200	NLPQ1426 2518 ①	—	—
20	NLPQ1426 3	200	NLPQ1426 2520 ①	—	—
22	NLPQ1426 3	200	NLPQ1426 2522 ①	—	—
24	NLPQ1426 3	200	NLPQ1426 2524 ①	—	—
26	NLPQ1426 3	200	NLPQ1426 2526 ①	—	—
28	NLPQ1426 3	200	NLPQ1426 2528 ①	—	—
30	NLPQ1426 3	200	NLPQ1426 2530 ①	—	—

The NLP and NLPQ panelboards accommodate Square D NQOD and QON interiors as follows.

Enclosure	3 Wire Branches	4 Wire Branches
NLPQ1426	QON124L200I	QON330L200

Note: When ordering enclosures only, interiors and circuit breakers are not included and must be ordered separately from Square D.

Dimensions In Inches:



Cat. #	Nominal Inside Dimensions		Door Opening Dimensions	Mounting Dimensions	Alternate Mounting Dimensions	
	nw	nl			mwa	mla
NLP1426	14	26	8 1/2	9 11/16	15 3/8	23 3/4

Not to be used for construction purposes unless approved.

* Watertight, weatherproof with door closed.

① Insert branch circuit breaker rating desired, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60 or 70 amp.

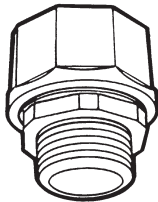
‡ 200A QON main lugs are #4/0 Cu/Al.

† See page 677 for wiring diagrams.

Note: Hubs, grounding plates and bushings must be ordered separately. See page 677 for listing.

Hubs

Krydon® material hubs for conduit entrances, in sizes 1/2" through 3" are available for factory or field installation in all enclosures made of Krydon material. For factory installation, send drawing showing sizes and locations of hubs. Furnished with and gaskets to assure.



Conduit Size	Hole Size	Hub Cat. #
1/2	7/8	NHUB1
3/4	1 1/8	NHUB2
1	1 3/8	NHUB3
1 1/4	1 3/4	NHUB4
1 1/2	2	NHUB5
2	2 1/2	NHUB6
2 1/2	3	NHUB7
3	3 5/8	NHUB8

Standard Materials:

- Up to 1 1/2" – Krydon material with steel interiors
- 2", 2 1/2" and 3" – Krydon material with Feraloy® iron alloy interiors

Standard Finishes:

- Krydon material – natural
- Steel – electrogalvanized and bleached chromate
- Feraloy iron alloy – electrogalvanized

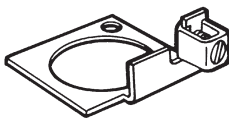
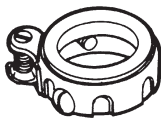
Standard Materials:

- Grounding plates – steel
- Grounding bushings – steel with thermoplastic insulating throat

Standard Finishes:

- Steel – electrogalvanized

Grounding Plates and Grounding Bushings



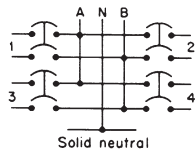
Grounding Plates (1/2" through 1") and insulated bushings (1/2" through 3") permit use of the conduit as the grounding circuit. Both types have set screws and ground-wire terminals.

Conduit Size	Grounding Plate Cat. #	Grounding Bushing Cat. #
1/2	GP1	GLS1
3/4	GP2	GLS2
1	GP3	GLS3
1 1/4		GLS4
1 1/2		GLS5
2		GLS6
2 1/2		GLS7
3		GLS8

Wiring Diagrams for Circuit Breaker Panelboards

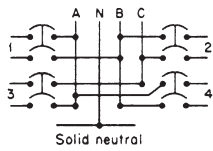
System 3

Mains—3-Wire
Branches—3-Wire
Breakers—2-Pole
Solid Neutral



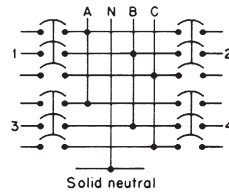
System 8

Mains—4-Wire, 3-Phase
Branches—3-Wire, 1-Phase
Breakers—2-Pole
Solid Neutral



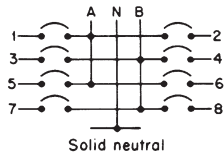
System 11

Mains—4-Wire, 3-Phase
Branches—4-Wire, 3-Phase
Breakers—3-Pole
Solid Neutral



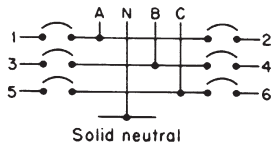
System 24

Mains—3-Wire
Branches—2-Wire
Breakers—Single-Pole
Solid Neutral



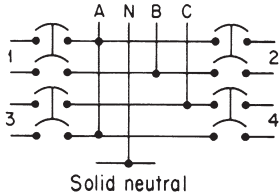
System 25

Mains—4-Wire, 3-Phase
Branches—2-Wire
Breakers—Single-Pole
Solid Neutral



System 28

Mains—4-Wire, 3-Phase
Branches—3-Wire, 1-Phase
Breakers—2-Pole
Solid Neutral



1A



1A

Description	Page No.
Application/Selection	see page 680
Enclosed Switches	
Heavy Duty	
FLS	see page 685
N2RS	see page 690
WST/W2ST	see page 696
General Use Snap Switches	
EFD, EFDC, EDS, EDSC	see pages 694–695
FSPC	see page 692
GUSC	see page 691
Manual Contactors	see page 700
Disconnect Switches	
EID (Non-fused)	see page 681
EID (Fused)	see page 682
EBM	see page 683
NRS	see pages 698–699
NST	see pages 701–702
GHG	see pages 686–689
Light Switch	
GHG273	see page 693



Application and Selection

Quick Selector Chart

Applications:

- Switches and enclosures are used in hazardous and non-hazardous areas to disconnect motor, lighting and other circuits and prevent arcing of the enclosed switch from igniting hazardous atmospheres.

Considerations for Selection:

Enclosure Location:

- NEC/CEC and NEMA/EEMAC compliances for hazardous areas and/or wet and dirty locations

Electrical:

- Consistency with the functions to be performed

Application:

- Selection of appropriate switch and operating mechanism

Options:

- Optional material and finishes available for highly corrosive atmospheres
- Various hub sizes are available to suit particular applications

Quick Selector Chart

Switch Enclosure	NEC/CEC & NEMA/EEMAC Compliances	Electrical Rating			Switch Type	Fused or Unfused
		Max. Amps	Max. Volts	Max. HP		
WST	NEMA/EEMAC: 3R, 4, 12	100	600VAC 250VDC	75	Visible blade Heavy duty	Fused & unfused
EDS, EDSC, EFD, EFDC	Cl. I, Div. 1 & 2, Groups B, C, D; Cl. II, Div. 1, Groups E, F, G; Cl. II, Div. 2, Groups F, G; Cl. III; NEMA/EEMAC: 3, 7BCD, 9EFG, 12	30	277VAC	2	General use snap	Unfused
FSPC	Cl. I, Div. 1 & 2, Groups A, B, C, D; Cl. II, Div. 1, Groups E, F, G; Cl. II, Div. 2, Groups F, G; Cl. III; NEMA/EEMAC: 3, 7ABCD, 9EFG, 12	20	277VAC	2	General use snap	Unfused
GUSC	Cl. I, Div. 1 & 2, Groups C, D; Cl. II, Div. 1, Groups E, F, G; Cl. II, Div. 2, Groups F, G; Cl. III; NEMA/EEMAC: 3, 7CD, 9EFG, 12	30	600VAC	2	General use snap	Unfused
FLS	Cl. I, Div. 1 & 2, Groups C, D; Cl. II, Div. 1, Groups E, F, G; Cl. II, Div. 2, Groups F, G; Cl. III; NEMA/EEMAC: 3, 4, 7CD, 9EFG, 12	100	600VAC	50	Visible blade Disconnect	Unfused
EBM	Cl. I, Div. 1 & 2, Groups B, C, D; Cl. II, Div. 1, Groups E, F, G; Cl. II, Div. 2, Groups F, G; Cl. III; NEMA/EEMAC 3, 4, 7BCD, 9EFG, 12	100	600VAC	75	Visible blade Disconnect	Fused & unfused
NRS	NEMA/EEMAC: 3, 4X, 12	100	600VAC	75	Rotary - Disconnect	Fused & unfused
N2RS	Cl. I, Div. 2, Groups B, C, D; NEMA: 3, 4X, 12	100	600VAC	60	Rotary - Disconnect	Unfused
NST	NEMA: 3, 4X, 12	200	600VAC 250VDC	125	Visible blade Disconnect	Fused & unfused
Manual Contactors	NEMA/EEMAC: 3R	30	600VAC	15	Contacts, snap	Unfused
GHG	Cl. I, Div. 2, Groups A, B, C, D; Cl. II, Div. 1, Groups E, F, G; Cl. I, Zones 1 & 2, Ex de IIB+H, Ex de IIC	180	600VAC	150	Rotary, snap	Unfused
EID	Cl. I, Div. 1 & 2, Groups B, C, D; Cl. I, Zones 1 & 2; Cl. II, Div. 1, Groups E, F, G; Cl. III	400	600VAC	350	Rotary - Disconnect	Fused & unfused

EID Disconnect Assembly

Non-fused

Cl. I, Div. 1 & 2, Groups B, C, D
Cl. I, Zones 1 & 2
Cl. II, Div. 1, Groups E, F, G
Cl. III

UL/cUL Listed
Enclosure Type 3, 3R, 4, 4X*,
7BCD, 9EFG

2A

Applications:

- Provides an explosionproof disconnect switch assembly for hazardous area electrical systems
- Incorporates Eaton's Crouse-Hinds' high integrity manufacturing standards for reliability and safety in a compact, space-efficient NEMA 4 enclosure

Features and Benefits:

- Can be ordered as enclosure only, allowing for field installation of switch while maintaining product certification
- NEMA 4X breather and drain** provides a moisture control solution in hose-down applications
- Small, compact footprint - less mounting space required
- Large red painted aluminum rotary handle operator mounted on cover assembly provides rugged, reliable performance in the field and allows for the position of the switch to be easily identified from a distance
- Neoprene cover gasket provides UL Type 4 (hose-tight) environmental rating
- Detachable/adjustable mounting feet provide flexible mounting alternatives for ease of installation; no need to replace the entire enclosure if a mounting foot is broken
- Stainless steel hinges provide easy access to inside of enclosure for wiring and maintenance
- (2) Conduit entries, one on top and one on bottom (EIDA—1" NPT entries, EIDB—1 1/2" NPT entries) for easy top or bottom feed of conductors
- (2) 1/2" NPT conduit entries, one on top and one on bottom, for field addition of breather and/or drain for use with auxiliary contacts; †holes come plugged with Eaton's Crouse-Hinds PLG explosionproof as standard
- Provides lockout/tagout capability which complies with OSHA requirements, allowing for locking in the ON or OFF position for standard maintenance checks
- Complies with NEC Article 312 wire bending requirements for max gauge wire, allowing for easy and safe installation, and reliable operation of product

Certifications and Compliances:

- Class I, Divisions 1 & 2, Groups B, C, D
- Class I, Zones 1 & 2
- Class II, Division 1, Groups E, F, G
- Class III
- Enclosure Type 3, 3R, 4 or 4X*, 7BCD, 9EFG
- UL Standard 1203
- cUL to CSA C22.2 No. 30

Standard Materials:

- Body and Cover—Copper-free Aluminum
- Gasket—Neoprene
- Cover Bolts—Steel
- Hinges—Stainless Steel
- Mounting Plate Sheet—Aluminum
- Rotary Actuating Handle—Aluminum

Standard Finishes:

- Copper-free Aluminum—Natural
- Steel—Electro-galvanized

Electrical Ratings:

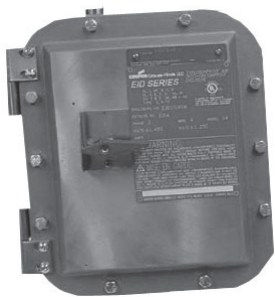
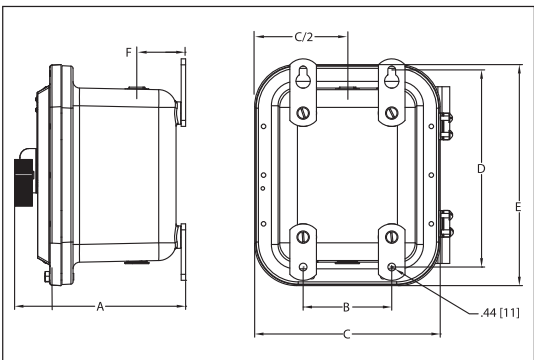
Non-fused HP Rating at:

Amps	200V	208V	240V	480V	600V
30	10	10	10	20	30
60	20	20	20	40	40
100	25	25	30	50	50
200	-	-	75	150	200
400	-	-	125	250	350

Ordering Information:

Switch Rating (Amps)	Enclosure Only	Enclosure with Switch
30	EIDA	EIDA3030
60	EIDA	EIDA3060
100	EIDB	EIDB3100
200	-	EIDC3200†
400	-	EIDD3400†

Dimensions:



Weights:

EIDA	36 lbs	16 kg
EIDB	62 lbs	28 kg

Options:

Description	Suffix
Auxiliary Contact (single block)	S784
Auxiliary Contacts (two blocks)	S785
Breather and Drain	S756V
Epoxy Powder Coat Finish (external only)	S752
Epoxy Powder Coat Finish (internal and external)	S753
External Ground Lug	S214

2A

*When ordered with S752 or S753 suffix.

**When ordered with S756V suffix.

†For both drains and auxiliary contacts, please contact factory.

‡Contact Customer Service for additional specifications.

Crouse-Hinds

by EATON

Cl. I, Div. 1 & 2, Groups B, C, D UL/cUL Listed
 Cl. I, Zones 1 & 2 Enclosure Type 3, 3R,
 Cl. II, Div. 1, Groups E, F, G 4, 4X*, 7BCD, 9EFG
 Cl. III

Applications:

- Provides an explosionproof disconnect switch assembly for hazardous area electrical systems
- Incorporates Eaton's Crouse-Hinds' high integrity manufacturing standards for reliability and safety in a compact, space-efficient NEMA 4 enclosure

Features and Benefits:

- NEMA 4X breather and drain** provides a moisture control solution in hose-down applications
- Small, compact footprint - less mounting space required
- Large red painted aluminum rotary handle operator mounted on cover assembly provides rugged, reliable performance in the field and allows for the position of the switch to be easily identified from a distance
- Neoprene cover gasket provides UL Type 4 (hose-tight) environmental rating
- Detachable/adjustable mounting feet provide flexible mounting alternatives for ease of installation; no need to replace the entire enclosure if a mounting foot is broken
- Stainless steel hinges provide easy access to inside of enclosure for wiring and maintenance
- (2) Conduit entries, one on top and one on bottom for easy top or bottom feed of conductors
- (2) NPT conduit entries, one on top and one on bottom, for field addition of breather and/or drain or for use with auxiliary contacts; †holes come plugged with Eaton's Crouse-Hinds PLG explosionproof as standard
- Provides lockout/tagout capability which complies with OSHA requirements, allowing for locking in the ON or OFF position for standard maintenance checks

Certifications and Compliances:

- Class I, Divisions 1 & 2, Groups B, C, D
- Class I, Zones 1 & 2
- Class II, Division 1, Groups E, F, G
- Class III
- Enclosure Type 3, 3R, 4 or 4X*, 7BCD, 9EFG
- UL Standard 1203
- cUL to CSA C22.2 No. 30

Standard Materials

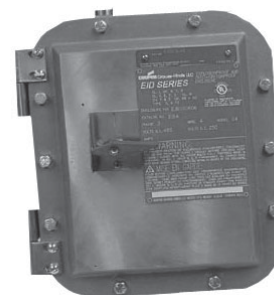
- Body and Cover—Copper-free Aluminum
- Gasket—Neoprene
- Cover Bolts—Steel
- Hinges—Stainless Steel
- Mounting Plate Sheet—Aluminum
- Rotary Actuating Handle—Aluminum

Standard Finishes:

- Copper-free Aluminum—Natural
- Steel—Electro-galvanized

Electrical Ratings:

Fused	HP Rating at:		
Amps	240V	480V	600V
30	-	15	20
60	-	30	50
100	-	60	75
200	60	125	150
400	125	250	350



Ordering Information:

Switch Rating (Amps)	Enclosure with Switch
30	EIDAF3030
60	EIDAF3060
100	EIDBF3100
200	EIDCF3200
400	EIDDF3400

Note: Fuses are not included (Type J recommended).

Note: Contact Customer Service for additional specifications.

Options:

Description	Suffix
Auxiliary Contact (single block) . . .	S784
Auxiliary Contacts (two blocks) . . .	S785
Breather and Drain	S756V
Epoxy Powder Coat Finish (external only)	S752
Epoxy Powder Coat Finish (internal and external)	S753
External Ground Lug.	S214

*When ordered with S752 or S753 suffix.

**When ordered with S756V suffix.

†For both drains and auxiliary contacts, please contact factory.

EBM Disconnect Switches and Enclosures

600 VAC Heavy Duty

Cl. I, Div. 1 & 2, Groups B, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 3R, 4 \ddagger , 4X $\dagger\dagger$, 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Watertight
Wet Locations

2A

Applications:

EBM series hinged cover disconnect switches are used:

- To disconnect motor, lighting and other circuits.
- In locations made hazardous by the presence of flammable gases or vapors or ignitable dusts.
- Indoors or outdoors in damp, wet and dirty locations, or in areas where frequent washdowns, heavy rain or water spray is prevalent.
- To provide disconnect means and short circuit protection (fusible version).
- On switchracks or other assemblies where it is desired that motor control be centrally located.

Features:

- Rugged corrosion resistant cast copper-free aluminum construction (less than 0.4 of 1%).
- Switch operating handle is located through the right side wall of the body, permits visual confirmation of correct alignment and operation.
- Total compliance to the wiring end room requirements of the National Electrical Code.
- Semi-clamshell enclosure design, with an external flanged ground joint between body and cover makes interior components more accessible.
- Minimum enclosure-to-enclosure spacing with little interference between the opened cover and an adjacent enclosure.
- Stainless steel hinges allow the cover to swing well out of the way.
- Stainless steel quick release captive hexhead cover bolts. Stainless steel springs provide clear indication that cover bolts are fully retracted from the body.
- Switch operating handle can be padlocked in either the "ON" or "OFF" position.
- Neoprene cover gasket permanently attached to the cover seals out moisture.
- Bodies have top and bottom drilled and tapped conduit entrances for power and conduits. Removable reducers are supplied as standard, to accommodate smaller size conduits. All conduit entrances are plugged.
- Tap on mounting feet.

Certifications and Compliances:

- NEC/CEC:
Class I, Division 1 & 2, Groups B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III
- UL Standards: UL1203
- High A.I.C. Rating (Interrupting Capacity)
- For Class I, Div. 1, Groups C & D only

Volt	RMS Symm-Amperes
240	65,000
480	50,000
600	25,000

- CSA Standard: C22.2 No. 30
- NEMA: 3, 3R, 4 \ddagger , 4X $\dagger\dagger$, 7BCD, 9EFG, 12

Standard Materials:

- Body and cover – copper-free aluminum
- Operating handle – copper-free aluminum
- Operating shaft and bushing – stainless steel
- Interior parts – sheet steel, electrogalvanized
- Cover bolts, washers and retractile springs – stainless steel
- Hinges – stainless steel

Electrical Rating Ranges:

- 600 VAC
- 30, 60 and 100 Amp

Amp Rating	Max. HP Rating				Enclosure	
	AC Polyphase			DC using 2 poles only	With Switch	Without Switch
	200/240V	440/480V	550/600V	250V Max.	600VAC Cat. #	Cat. #
Non-Fusible						
30	10	20	25	7½	EBMBB FD W30360	EBMBB FD
60	20	40	60	15	EBMBB FD W60360	EBMBB FD
100	30	75	75	25	EBMBD FD W10360	EBMBD FD
Fusible						
30	—	5	7½	5	EBMBB FD W30361	EBMBB FD
60	—	15	15	10	EBMBB FD W60361	EBMBB FD
100	15	25	30	20	EBMBD FD W10361	EBMBD FD

Options:

- For available options, see pages 494–495.



Ordering Information:

To order an enclosure complete with the disconnect switch, select the catalog number (based on the necessary rating of the switch), from the listing below.

Enclosures only, without the disconnect switch, can be ordered. Select the catalog number for the required enclosure from the listing below.

\ddagger Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.
 $\dagger\dagger$ With S752 or S753.

2A

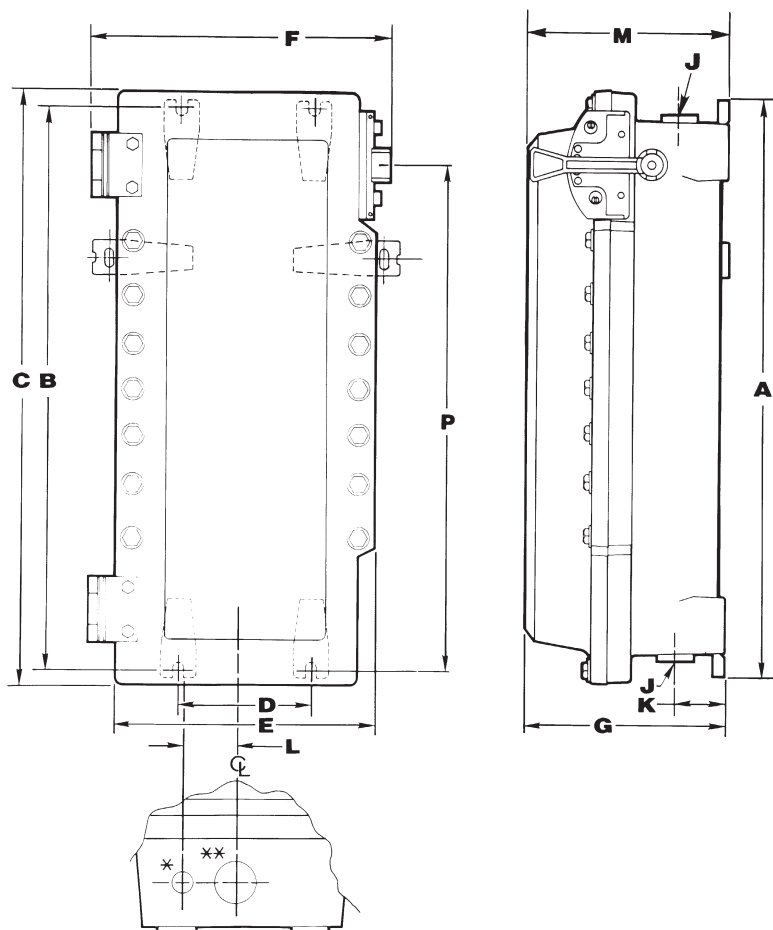
EBM Disconnect Switches and Enclosures

600 VAC Heavy Duty

Cl. I, Div. 1 & 2, Groups B, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 3R, 4†, 4X††, 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Watertight
Wet Locations

Dimensions In Inches:



Dimensions are approximate, not for construction purposes.

*1" D & T conduit entry for control conductors supplied with PLG plug top and bottom.

**Conduit entrance(s) for power conductors (top and bottom). (All conduit entrance(s) supplied with RE reducer and PLG plug.)

	Enclosure Only Cat. #	Enclosure Size Symbol	**J Conduit Entry Trade Size												
			A	B	C	D	E	F	G	D&T†	w/RE	K	L	M	P
30 and 60 Amp Frame	EBMBB	B	25.75	24.75	26.90	6.00	13.03	14.46	10.25	2"	1.5"	3.25	3.13	10.25	22.00
100 Amp Frame	EBMBD	D	28.25	27.25	29.40	6.00	13.03	14.46	10.25	3"	2.5"	3.25	3.13	10.25	24.50

‡ Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.

††With S752 or S753.

†Drilled & Tapped.

FLS Enclosed Switches

Heavy Duty

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 4, 7CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

2A

Applications:

- FLS heavy duty enclosed switches are used:
- In a rigid metallic conduit system for surface mounting adjacent to or remote from equipment being controlled
 - As disconnect switches for main feed or individual motor control
 - To prevent arcing of the enclosed switch from causing ignition of a specific hazardous atmosphere, or atmospheres, external to the enclosure
 - In industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators, grain processing industries, coal processing or handling areas and metal handling or finishing areas where atmosphere may contain hazardous gases and/or dust
 - In non-hazardous area where sturdy, durable enclosures are required

Features:

- Enclosed devices are unfused, visible blade motor circuit switches
- Rugged cast metal enclosures with mounting lugs and taper tapped hubs with integral bushings, in through feed arrangement
- Interior of the enclosures is readily accessible through threaded cover openings at each end, set at an angle to facilitate wiring
- Threaded covers and a threaded type operating shaft and bushing provide quick assembly and easy maintenance
- A padlock can be used to lock the operating handle in an "ON" or "OFF" position
- Body and cover threads treated with lubricant at factory to provide raintightness

Certifications and Compliances:

- NEC:
 - Class I, Divisions 1 & 2, Groups C, D
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- NEMA: 3, 4, 7CD, 9EFG, 12
- UL Standard: 1203

Standard Materials:

- Body – copper-free aluminum
- Cover – copper-free aluminum
- Shaft – stainless steel
- Shaft bushings – stainless steel

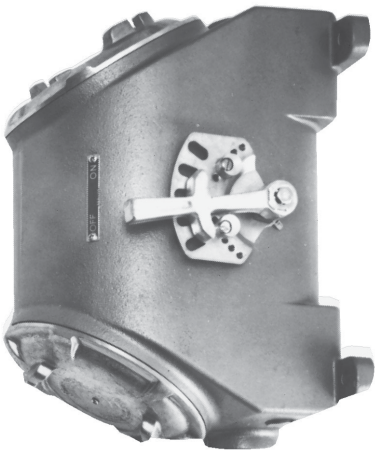
Standard Finishes:

- Copper-free aluminum – natural
- Stainless steel – natural

Options:

Description
Ground/neutral wire stud provided
Breather and Drain
Auxiliary switch: 1A, 1B
Auxiliary switch: 2A, 2B

Suffix
S168
S198V
S784
S785



Size Ranges:

- Hub size – 1½" through feed with top entry having a PLG5 plug

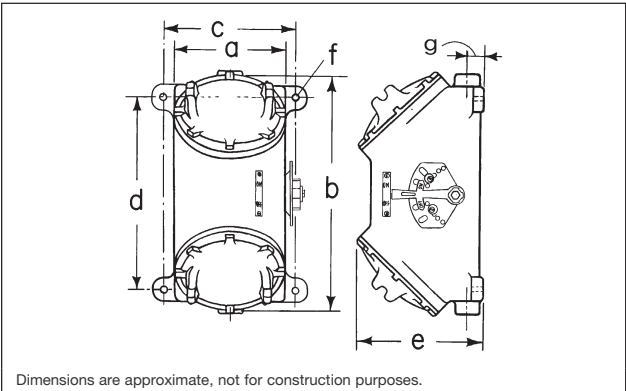
Ordering Information:

Furnished with Non-Fusible, Visible Blade Motor Circuit Switch
Switch Ratings

Amperes	Maximum HP – 3 Phase					Through Feed Hub Size	Enclosure With 3-Pole Switch Cat. #
	125 Volts AC	240	480	600	250 VDC		
30	5	10	20	25	7.5	1½"	FLS30364 1 33
60	10	20	40	60	15	1½"	FLS60364 1 44
100	15	30	75	75	25	1½"	FLS10364 1 55

Dimensions

In Inches:



a	b	c	d	e	f	g
7½	13⅞	8½	9¾	9⅞	7/16	1¾

2A Explosion Protected Disconnect Switches

10, 20, 40, 80, 125 and 180 Amp
600VAC Non-metallic Enclosure

cCSAus Certified
Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zones 1 and 2, AEx de IIC, T6
Cl. II, Div. 1, Groups E, F, G (CSA)
Cl. II, Div. 2, Groups F, G
ATEX Approved
Ex de IIC, T6, Zones 1 and 2, IP66

Applications:

Explosion Protected Disconnect Switches are used in a metallic conduit or cable system for surface mounting to control motor, lighting, and other circuits and:

- For individual motor control
- Are used to prevent arcing internal to the enclosed switch from causing ignition of a specific hazardous atmosphere or atmospheres
- Are designed for industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, and finishing areas where sturdy, durable enclosures are required

Features:

- Explosion protected factory sealed motor circuit switches.
- Innovative break-line in cover allows full wiring access, making installation quick and easy.
- High-impact enclosure is designed for excellent corrosion resistance and will not warp from hot or cold water.
- Tongue-in-groove seal guarantees IP66 rating and eliminates possibility of accidental opening or leakage.
- Lockable handle meets OSHA lockout/tagout requirements.
- Molded-in-place mounting feet provide a water channel between wall and enclosure.
- Large rotary handle provides easy gripping with gloved hands.
- Captive cover screws prevent water exposure and possible corrosion.

Certifications and Compliances:

- cCSAus Certified
- Class I, Division 2, Groups A, B, C, D
- Class I, Zones 1 and 2, AEx de IIC, T6
- Class II, Division 1, Groups E, F, G (CSA)
- Class II, Division 2, Groups F, G
- ATEX Approved - PTB
- Ex de IIC, T6, Zones 1 and 2A, IP66
- GOST-R and GOST-K
- CSA Standard: C22.2 No.14
- NEMA 4X
- IP66



Standard Materials:

- Enclosure
 - 10A: Impact-resistance thermoplastic
 - 20A – 180A: Fiberglass-reinforced polyester
 - Non-metallic, corrosion resistance
 - Increased safety Ex-e protection
 - Impact Resistance
 - NEMA 4X, IP66 Protection
 - Enclosure meets UL 94-V0
 - UV Rated
- Enclosure Gasket – Silicon
- Handle – Impact-resistant thermoplastic
- Cover Screws – Stainless steel
- Conduit Entries: Zinc Myers™ Hubs

Electrical Rating Ranges:

Switches:		Horsepower Ratings:	
		240 VAC	600 VAC
GHG 261	10A	0.75	–
GHG 262	20A	14.3	12.2
GHG 263	40A	20	15
GHG 264	80A	50	30
GHG 265	125A	40	75
GHG 266	180A	40	75

Explosion Protected Disconnect Switches

**10, 20, 40, 80, 125 and 180 Amp
600VAC Non-metallic Enclosure**

cCSAus Certified
Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zones 1 and 2, AEx de IIC, T6
Cl. II, Div. 1, Groups E, F, G (CSA)
Cl. II, Div. 2, Groups F, G
ATEX Approved
Ex de IIC, T6, Zones 1 and 2, IP66

2A

Ordering Information:

	10 AMP	20 AMP	40 AMP	40 AMP	40 AMP
Pole	3 Pole	3 Pole	6 Pole	3 Pole	6 Pole
Rated Voltage	500 V	690 V	690 V	690 V	690 V
Auxiliary Contact	1 NO, making – lagging breaking – leading	1 NO, making – lagging breaking – leading	1 NC	1 NO, making – lagging breaking – leading	1 NC
Auxiliary Connection	14 AWG 2 x 2.5 mm ²	12 AWG 2 x 4 mm ²	12 AWG 2 x 4 mm ²	12 AWG 2 x 16 mm ²	12 AWG 2 x 16 mm ²
Connection Terminals	14 AWG	12 AWG	12 AWG	6 AWG	6 AWG
Conduit Entries	1 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 1"
Cat. #	GHG 261 0005 L0002	GHG 262 2301 L0003	GHG 262 2601 L0002	GHG 263 2301 L0002	GHG 263 0050 L0002
Weight	0.55 kg 1.2 lbs.	1.5 kg 3.3 lbs.	2.3 kg 5.1 lbs.	2.3 kg 5.1 lbs.	6.5 kg 14.3 lbs.
Dimensions	See Figure 1	See Figure 2	See Figure 3	See Figure 4	See Figure 5
Wall Mounting Plate	GHG6101953R0101	GHG 610 1953 R0104	GHG 610 1953 R0118	GHG 610 1953 R0118	not required

	80 AMP	125 AMP	180 AMP	180 AMP
Pole	3 Pole	6 Pole	3 Pole	3 Pole
Rated Voltage	690 V	690 V	690 V	690 V
Auxiliary Contact	1 NO, making – lagging breaking – leading	1 NC	1 NO, making – lagging breaking – leading	1 NO, making – lagging breaking – leading
Auxiliary Connection	12 AWG 2 x 50 mm ²	12 AWG 2 x 50 mm ²	12 AWG 1 x 70 mm ²	12 AWG 1 x 120 mm ²
Connection Terminals	2 AWG	2 AWG	2 / 0 AWG	4 / 0 AWG
Conduit Entries	2 x 1 1/2"	2 x 1 1/2"	2 x 1 1/2"	2 x 2"
Cat. #	GHG 264 0020 L0017	GHG 264 0021 L0002	GHG 265 0010 L0003	GHG 266 0006 L0002
Weight	6.5 kg 14.3 lbs.	9.0 kg 19.8 lbs.	16.0 kg 35.2 lbs.	16.5 kg 36.3 lbs.
Dimensions	See Figure 6	See Figure 7	See Figure 8	See Figure 8
Wall Mounting Plate	not required	not required	not required	not required

For Variable Speed, Three Phase Drives

	20 AMP	40 AMP	80 AMP
Pole	3 Pole	3 Pole	3 Pole
Rated Voltage	690 V	690 V	690 V
Auxiliary Contact	1 NO, making – lagging breaking – leading	1 NO, making – lagging breaking – leading	1 NO, making – lagging breaking – leading
Auxiliary Connection	12 AWG 2 x 4 mm ²	6 AWG 2 x 16 mm ²	2 AWG 2 x 35 mm ²
Connection Terminals	12 AWG	6 AWG	2 AWG
Conduit Entries	2 x 3/4"	1 x 1" + 1 x 1/2"	1 x 1 1/2" + 1 x 1/2"
Cat. #	GHG 262 0014 L0001	GHG 263 0053 L0001	GHG 264 0024 L0001
Weight	1.6 kg 3.5 lbs.	2.3 kg 5.1 lbs.	3.5 kg 7.7 lbs.
Dimensions	See Figure 9	See Figure 10	See Figure 11
Wall Mounting Plate	GHG 610 1953 R0118	GHG 610 1953 R0118	GHG6101953R0110

Switches can be mounted directly onto a wall. The optional wall mounting plate offers a more convenient method of mounting.

2A

Explosion Protected Disconnect Switches

10, 20, 40, 80, 125 and 180 Amp
600VAC Non-metallic Enclosure

cCSAus Certified
Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zones 1 and 2, AEx de IIC, T6
Cl. II, Div. 1, Groups E, F, G (CSA)
Cl. II, Div. 2, Groups F, G
ATEX Approved
Ex de IIC, T6, Zones 1 and 2, IP66

Dimensions In Inches:

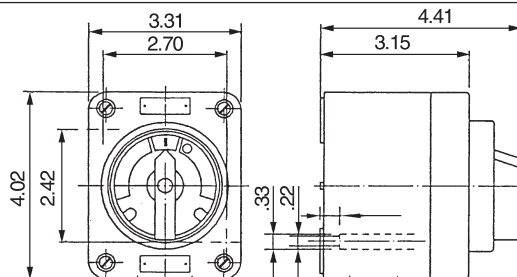


Figure 1 - 10 Amp, 3 Pole

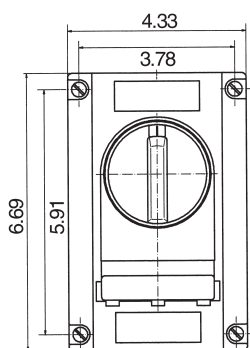


Figure 2 - 20 Amp, 3 Pole

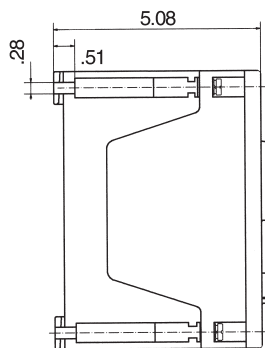


Figure 3 - 20 Amp, 6 Pole

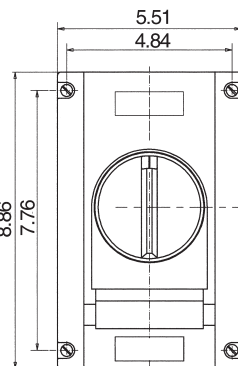


Figure 4 - 40 Amp, 3 Pole

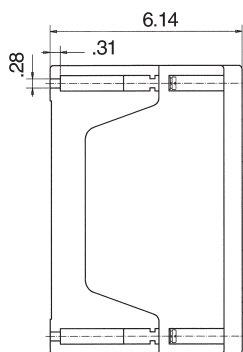


Figure 5 - 40 Amp, 6 Pole

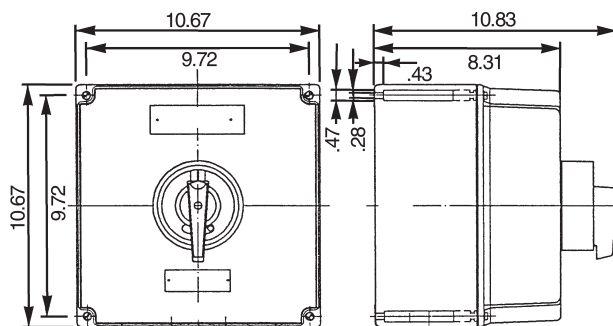


Figure 6 - 80 Amp, 3 Pole

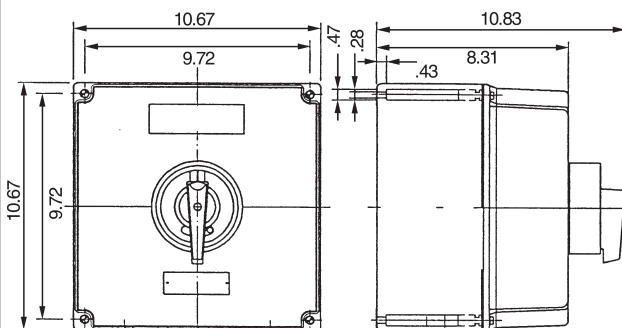
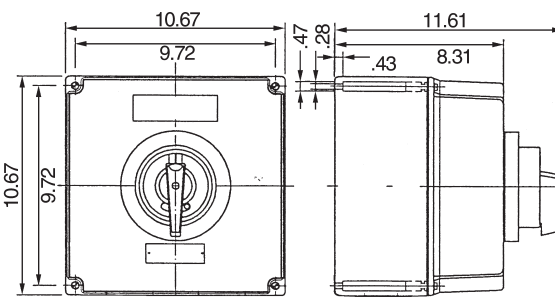


Figure 7 - 80 Amp, 6 Pole



Crouse-Hinds
by **Eaton**

Explosion Protected Disconnect Switches

10, 20, 40, 80, 125 and 180 Amp
600VAC Non-metallic Enclosure

cCSAus Certified
Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zones 1 and 2, AEx de IIC, T6
Cl. II, Div. 1, Groups E, F, G (CSA)
Cl. II, Div. 2, Groups F, G
ATEX Approved
Ex de IIC, T6, Zones 1 and 2, IP66

2A

Dimensions In Inches:

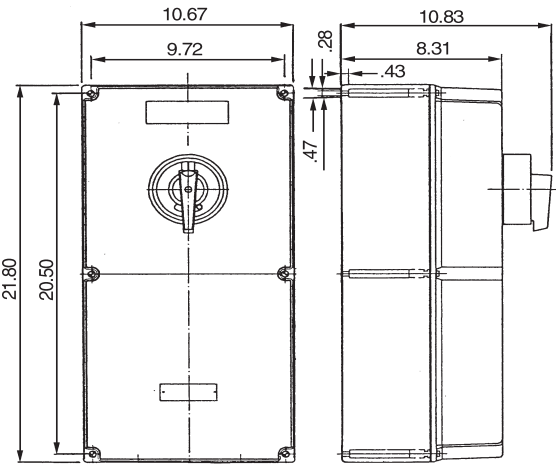


Figure 8 - 125 Amp, 3 Pole 180 Amp, 3 Pole

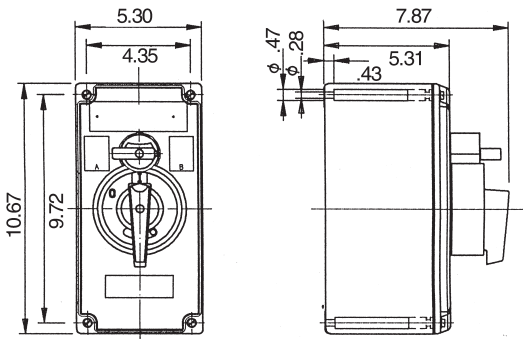


Figure 9 - 20 Amp, 3 Phase Variable Speed

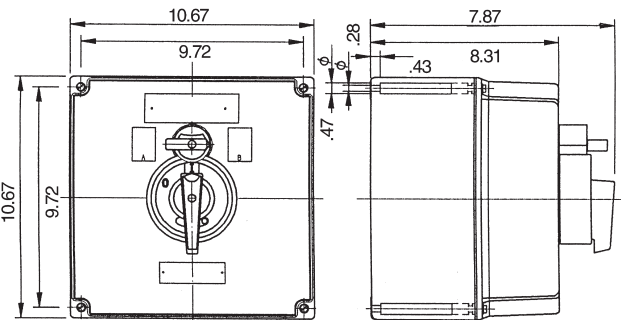


Figure 10 - 40 Amp, 6 Phase Variable Speed

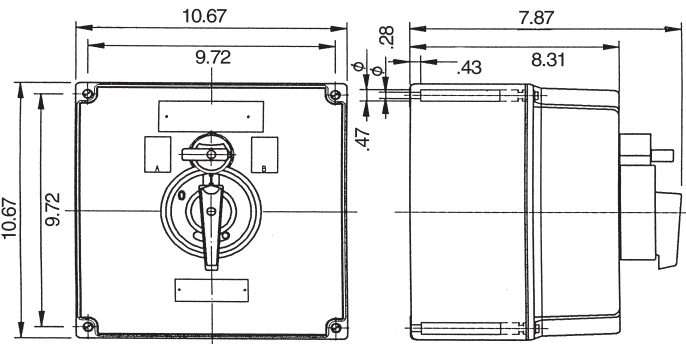


Figure 11 - 80 Amp, 3 Phase Variable Speed

2A

2A N2RS Enclosed Switches

Heavy-Duty

Cl. I, Div. 2, Groups B, C, D
NEMA 3, 4X, 7 (B, C, D Div. 2), 12
Watertight
Dust-tight
Factory Sealed

Applications:

N2RS heavy-duty enclosed switches are used:

- In a rigid metallic conduit or cable system for surface mounting adjacent to or remote from equipment being controlled.
- For individual motor control.
- To prevent arcing internal to the enclosed switch from causing ignition of a specific hazardous atmosphere, or atmospheres.
- In industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, and finishing areas where atmospheres may contain hazardous gases.
- In non-hazardous areas where sturdy, durable enclosures are required.
- When controlling motor, lighting and other circuits.

Features:

- Enclosed devices are unfused, factory sealed motor circuit switches.
- Exceeds NEC® wiring end room requirements for ease of installation.
- RSWP factory sealed industrial control switch, no external seals are required.
- Enclosure is made of *Krydon*® high-impact strength fiberglass-reinforced polyester material having excellent corrosion resistance and stability to heat.
- *Krydon* material hubs with integral bushings, for dead-end or through-feed arrangements are supplied.
- *Krydon* material mounting feet supplied.
- Suitable for wash down and corrosive areas (Type 4X).
- A padlock can be used to lock the operating handle in the "OFF" position.
- Rotary actuator with snap action.
- Unitized, strong and durable construction provides longer service life for equipment.
- Factory sealed 10A, 600 VAC auxiliary contact switch provided.

Certifications and Compliances:

- NEC:
Class I, Division 2, Groups B, C, D
- NEMA: 3, 4X, 7 (B, C, D Div. 2), 12
- UL Standard: 508, 1604
- cUL to CSA Standard C22.2 No.213
- IP65

Standard Materials:

- Enclosure – *Krydon* material
- External Hardware – Stainless Steel
- Operating Handle – Nylon

Size Ranges:

- Hub size:
(2) 1½" (30, 60 amps)
(2) 2½" (100 amps)

Krydon material hubs included (not mounted)



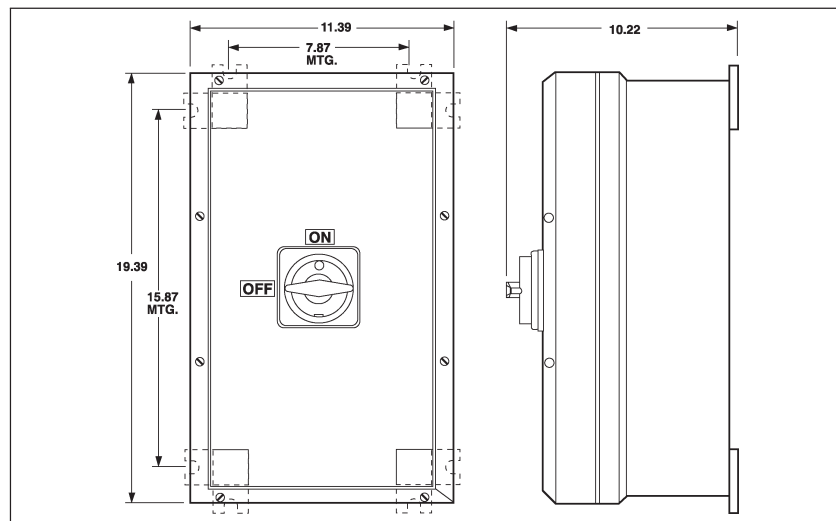
Ordering Information

Furnished with Non-Fusible, Factory Sealed Motor Circuit Switch
Switch Ratings

Amperes	Maximum HP – 3 Phase Volts AC			Enclosure with 3-Pole Switch	
	240	480	600	Hub Size	Cat. #
30	10	20	25	1½"	N2RS303
60	15	30	40	1½"	N2RS603
100	20	40	60	2½"	N2RS1003

Dimensions

In Inches:



GUSC Enclosures

with General Use Snap Switches

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 7CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

2A

Applications:

- GUSC snap switches are used:
 - In a rigid metallic conduit system for surface mounting adjacent to or remote from the equipment being controlled
 - To prevent arcing of the enclosed switches from causing ignition of a specific hazardous atmosphere, or atmospheres, external to the enclosure
 - In industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators, grain processing industries, coal processing or handling areas, or metal handling or finishing areas where the atmosphere may contain hazardous gases and/or dust
 - In non-hazardous areas where sturdy, durable enclosures are required

Features:

- Enclosures are of rugged metal construction with mounting lugs and taper tapped hubs with integral bushings, in a through feed or bottom feed arrangement, for connection to the rigid metallic conduit
- Cover is threaded, which provides for fast and proper assembly
- Provided with a threaded operating shaft and bushing
- Provision is made to use a padlock with $\frac{1}{4}$ " hasp, to lock the operating lever in an "ON" or "OFF" position
- Body and cover threads treated with lubricant at factory to provide raintightness

Certifications and Compliances:

- NEC/CEC:
 - Class I, Div. 1 & 2, Groups C, D
 - Class II, Div. 1, Groups E, F, G
 - Class II, Div. 2, Groups F, G
 - Class III
- NEMA/EEMAC: 3, 7CD, 9EFG, 12
- UL Standard: 1203
- CSA Standard: C22.2, No. 30

Standard Materials:

- Body – *Feraloy*® iron alloy
- Cover – copper-free aluminum
- Shaft – stainless steel
- Shaft bushing – stainless steel

Standard Finishes:

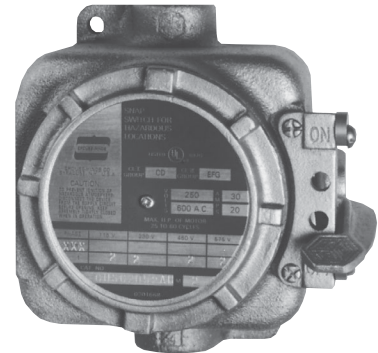
- Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural

Size Ranges:

- Hub size – $\frac{3}{4}$ " (through feed arrangement)

Electrical Rating Ranges:

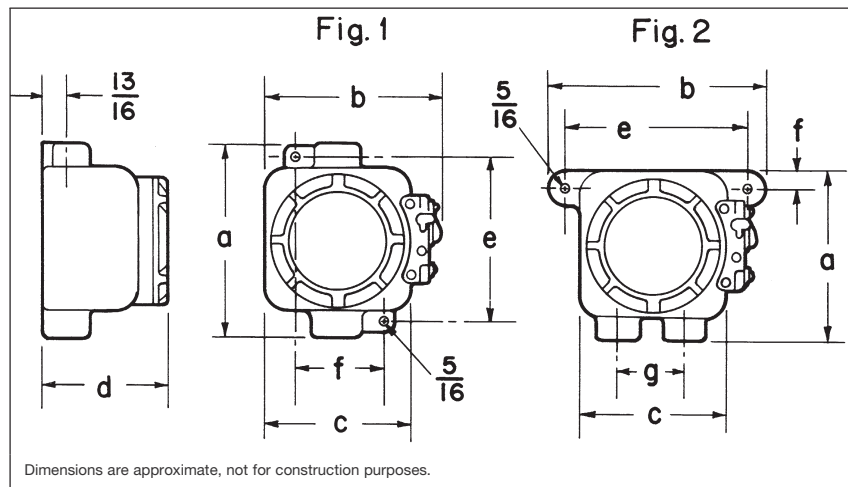
- See below



Ordering Information:

Cat. #	Style	Rating		Horsepower	Hub Size
		250 (VAC)	600 (VAC)		
GUSC2052 AH	2-Pole	30A	20A	2 HP	$\frac{3}{4}$ "
GUSC2013 AH	3-Pole	30A	20A	2 HP	$\frac{3}{4}$ "

Dimensions In Inches:



Type	Size	a	b	c	d	e	f	g
Through Feed Hubs – Fig. 1								
2, 3-Pole		$6\frac{3}{16}$	$6\frac{1}{16}$	$4\frac{7}{8}$	$4\frac{1}{8}$	$5\frac{3}{8}$	3	
Two Hubs at Bottom – Fig. 2								
2, 3-Pole		$5\frac{7}{16}$	$6\frac{3}{8}$	$4\frac{7}{8}$	$4\frac{1}{8}$	$5\frac{3}{8}$	$\frac{3}{8}$	$2\frac{1}{4}$

Crouse-Hinds

by **EATON**

with General Use Snap Switches

Cl. I, Div. 1 & 2, Groups A†, B, C, D
 Cl. II, Div. 1, Groups E, F, G
 Cl. II, Div. 2, Groups F, G
 Cl. III
 NEMA 3, 7A†BCD, 9EFG, 12

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations

Applications:

FSPC snap switches are installed in a rigid metallic conduit system for surface mounting adjacent to or remote from equipment being controlled and are used:

- To prevent arcing of enclosed switch from causing ignition of a specific hazardous atmosphere or atmospheres external to the enclosure
- In industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators, grain processing industries, coal processing or handling areas, or metal handling or finishing areas where atmosphere may contain hazardous gases and/or dust
- In non-hazardous areas where sturdy, durable enclosures are required

Features:

- Rugged cast metal enclosure with mounting lugs and taper tapped hubs with integral bushings, in a through feed arrangement.
- Threaded cover to provide fast, proper assembly and easier maintenance.
- Journalled type operating shaft – close tolerance fit for flametightness.
- Body and cover threads treated with lubricant at factory to provide raintightness.

Certifications and Compliances:

- NEC:
 FSPC 21 series –
 Class I, Divisions 1 & 2, Groups C, D
 Class II, Division 1, Groups E, F, G
 Class II, Division 2, Groups F, G
 Class III
- NEMA: 3, 7CD, 9EFG, 12
- NEC:
 FSPC 216 series –
 Class I, Divisions 1 & 2, Groups A, B, C, D
 Class II, Division 1, Groups E, F, G
 Class II, Division 2, Groups F, G
 Class III
- NEMA: 3, 7ABCD, 9EFG, 12
- UL Standard: 1203
- CEC:
 FSPC 216 series –
 Class I, Divisions 1 & 2, Groups C, D
 Class II, Division 1, Groups E, F, G
 Class II, Division 2, Groups F, G
 Class III
- Encl. 3, 5
- CSA Standard C22.2, No. 30

†Suitable for Groups A & B usage.

‡30A, 250 VAC; 20A, 600 VAC.

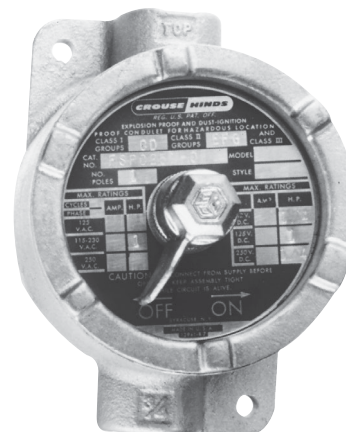
§See pages 694–695 for AC-rated switch information.

Standard Materials:

- Body – Feraloy® iron alloy
- Cover – copper-free aluminum
- Shaft – stainless steel
- Bushing – stainless steel

Standard Finishes:

- Feraloy iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural

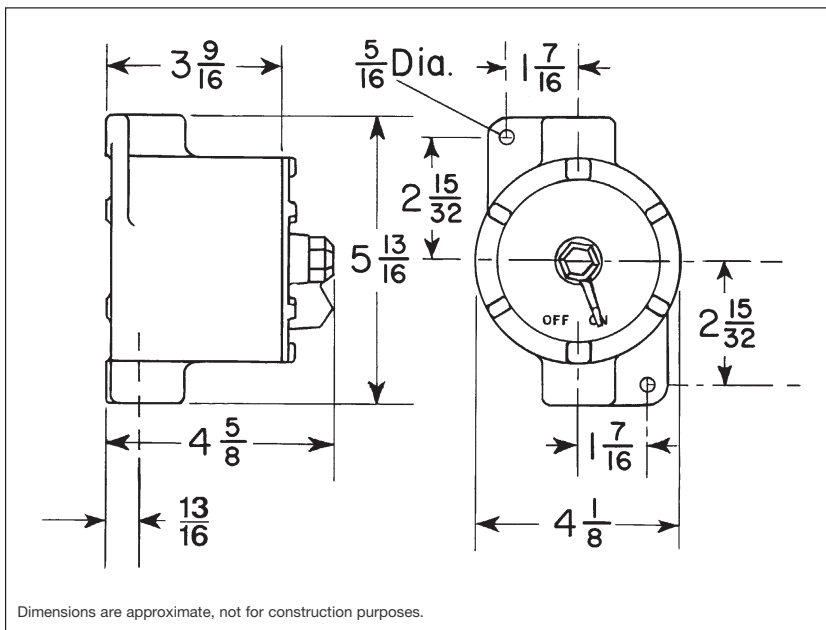


Ordering Information:

Switch Information				Enclosure with Switch	
Hub Size	Style	Amperes		Cat. #	Cat. # †
		120VAC§	277VAC§		
3/4	1-pole	20	20	FSPC21	FSPC216
3/4	2-pole	20	20	FSPC22	FSPC226
3/4	3-pole	‡	‡	FSPC230	FSPC2306
3/4	3-way	20	20	FSPC23	FSPC236

Dimensions

In Inches:



Light Switch

cCSAus Certified
Cl. I, Div. 2, Groups A, B, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G

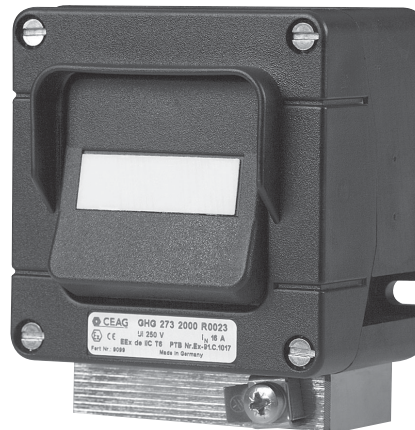
Cl. I, Zone 1 & 2 Ex de IIC T6
Cl. I, Zone 1 & 2 AEx de IIC T6

2A

Applications:

GHG273 series of switches are used:

- To prevent arcing of enclosed switch from causing ignition of a specific hazardous atmosphere external to the enclosure
- In Division 2, Zone 1 and Zone 2 industrial areas such as: chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators and processing industries, coal processing or handling areas, or finishing areas where atmosphere may contain hazardous gases and/or dust
- In non-hazardous areas where sturdy, durable enclosures are required for both indoor and outdoor installations of light switches



Features:

- Small and compact in design.
- Large grounding plate.
- Captive cover screws.
- Protective collar for inadvertent operation.
- Large actuator surface allows for operation while wearing work gloves.
- Labyrinth seal to guarantee the degree of protection IP66.
- The toggle has a luminescent label to locate switch in dark areas.
- Cable entry from the top is made possible by turning the base.

Certifications and Compliances:

- cCSAus Listed
- Class I, Division 2, Groups A, B, C, D
- Class II, Division 1, Groups E, F, G
- Class II, Division 1, Groups F, G
- Class I, Zone 1 & 2, EEx de IIC T6
- Class I, Zone 1 & 2, AEx de IIC T6
- Class I, Zone 1 & 2, Ex de IIC T6
- PTB Certificate of Conformity Ex-91.C.1017
- IP66

Standard Materials:

- Body and cover – low temperature, impact-resistant thermoplastic
- Shaft and screws – stainless steel
- Grounding plate – brass

Standard Finishes:

- Thermoplastic – natural
- Stainless steel – natural
- Brass – nickel plate

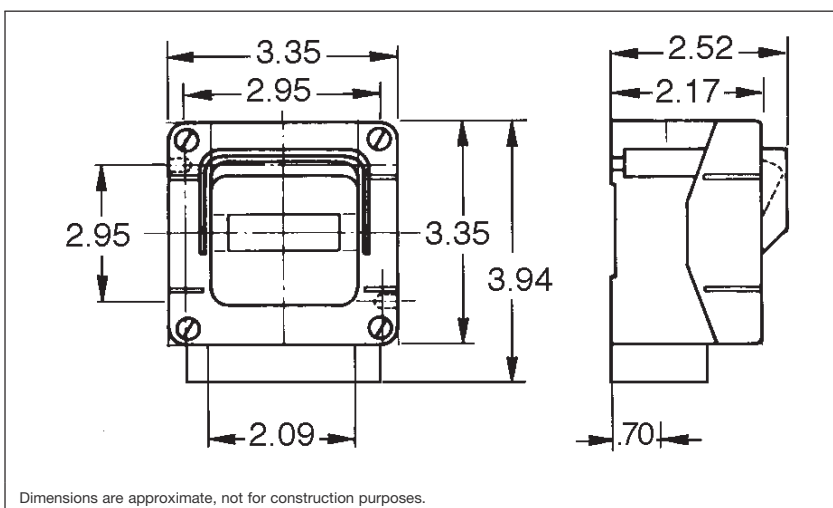
Electrical Ratings:

Voltage 250VAC 50 / 60 Hz
Current 16 Amps

Ordering Information

Cat. #	Contact Arrangement	Description	Entry Size
GHG 273 2000 L0005		2-pole	1 x 1/2" NPT
GHG 273 2000 L0006		2-pole	1 x 3/4" NPT
GHG 273 6000 L0001		3-way	1 x 1/2" NPT
GHG 273 6000 L0002		3-way	1 x 3/4" NPT

Dimensions In Inches:



Crouse-Hinds

by EATON

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693

**with General Use Snap Switches
Front Operated**

Cl. I, Div. 1 & 2, Groups B*, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 7B*CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Applications:

EDS and EFD enclosures are installed in a rigid metallic conduit system for surface mounting adjacent to or remote from equipment being controlled and are used:

- To prevent arcing of enclosed switch from causing ignition of a specific hazardous atmosphere or atmospheres external to the enclosure
- In industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators, grain processing industries, coal processing or handling areas, or metal handling or finishing areas where atmosphere may contain hazardous gases and/or dust
- In non-hazardous areas where sturdy, durable enclosures are required

Features:

- Small and compact in design.
- Used with snap switches.
- Mounting lugs and taper tapped hubs with integral bushings.
- Large machine screws for fastening covers to bodies.
- Lockout hole for padlock having $\frac{1}{4}$ " hasp is provided.
- Threaded type shafts and bushings are used to insure flame tightness.

Certifications and Compliances:

- NEC/CEC:
Class I, Divisions 1 & 2, Groups B*, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III
- NEMA/IEE: 3, 7B*CD, 9EFG, 12
- UL Standard: 1203
- CSA Standard: C22.2 No. 30

Standard Materials:

- Bodies and covers – *Feraloy*® iron alloy
- Shafts – stainless steel
- Shaft bushings – stainless steel

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Stainless steel – natural

Options:

Description

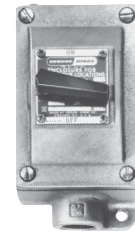
- Two or three gang bodies can be supplied with combinations of devices listed for one gang enclosures – Refer to modular listing, section 4C
- Class I Group B, NEMA 7B – see listing pages
- Bodies and Covers: copper-free aluminum
- Flush wall mounting cover with $\frac{1}{2}$ " overhang – single gang only – dull black instrument finish

Suffix

GB

SA

S173



**EDS Enclosed
Snap Switch**

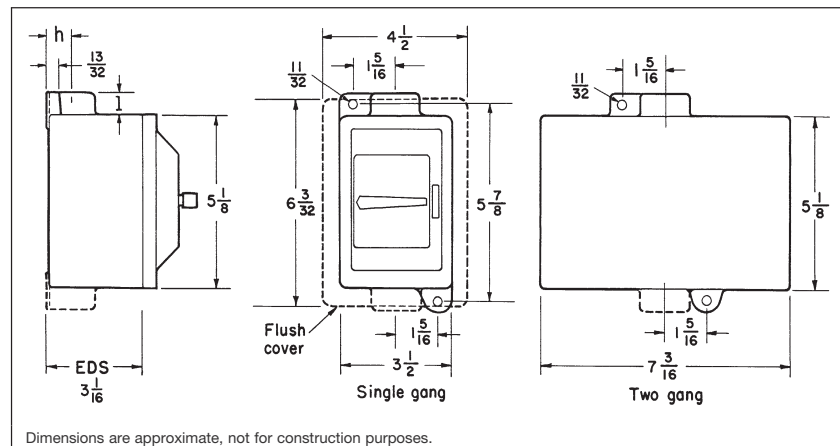
Electrical Ratings

Complies with U.L. snap switch test requirements as follows:

Type of Test	AC-Rated (only) Switch
Overload	Rated Amp. +380% Power Factor .40 – .50 100 cycles, 6 – 10 cycles per minute
Non-Inductive Endurance	10,000 cycles, 18 – 24 cycles per minute at rated current – .98 min. P.F.
Inductive Endurance	10,000 cycles, 18 – 24 cycles per minute – .75 – .80 P.F.
Tungsten Filament Lamp Endurance	10,000 cycles, 6 – 10 cycles per minute at rated current and 120 volts
Temperature Rise	Not to exceed 30°C
Dielectric Withstand	1500 volts

Dimensions

In Inches:



Hub Size	Dim. "h"	Dim. "l"
$\frac{3}{4}$	$\frac{7}{8}$	$\frac{13}{16}$
1	1	$\frac{15}{16}$

*Class I, Group B:

All units listed on this page can be modified for Class I, Group B usage. Add suffix GB to the catalog number. Example: EDS2129-GB.
Seals must be installed within $\frac{1}{2}$ " of each conduit opening in Division 1.

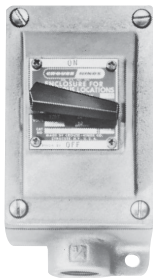
EDS and EFD Enclosures

with General Use Snap Switches
Front Operated

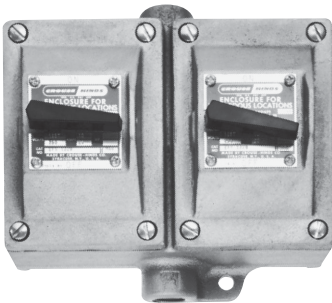
Cl. I, Div. 1 & 2, Groups B*, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 7B*CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

2A



Dead end



Through feed

Ordering Information:

Hub Size	Style	Amperes§		Single Gang		Replacement Switch	Two Gang ■	
		120VAC	277VAC	Dead End Cat. #	Through Feed Cat. #		Dead End Cat. #	Through Feed Cat. #
3/4	1-pole	20	20	EDS2129	EDSC2129†	SW5	EDS2229	EDSC2229†
3/4	2-pole	20	20	EDS218	EDSC218†	SW6		EDSC228†
3/4	3-pole	‡ ☼	‡	EDS2123	EDSC2123	0206500		EDSC2223
3/4	3-way	20	20	EDS2130	EDSC2130	SW7	EDS2230	EDSC2230
3/4	4-way	20	20	EDS2140	EDSC2140	SW8		EDSC2240
1	1-pole	20	20	EDS3129	EDSC3129†	SW5	EDS3229	EDSC3229†
1	2-pole	20	20	EDS318	EDSC318†	SW6	EDS328	EDSC328†
1	3-pole	‡ ☼	‡	EDS3123	EDSC3123	0206500		EDSC3223
1	3-way	20	20	EDS3130	EDSC3130	SW7	EDS3230	EDSC3230
1	4-way	20	20	EDS3140	EDSC3140	SW8	EDS3240	EDSC3240
1	1-pole	30 ☼	30	EFD3591	EFDC3591†	AH3991*	EFD3691	EFDC3691†
1	2-pole	30 ☼	30	EFD3593	EFDC3593†	AH3992*		EFDC3693†
1	3-way	30 ☼	30	EFD3594	EFDC3594	AH3993*	EFD3694	EFDC3694

*Class I, Group B:
All units listed on this page can be modified for Class I, Group B usage. Add suffix GB to the catalog number. Example: EDS2129-GB.
Seals must be installed within 1½" of each conduit opening in Division 1.
†ON-OFF standard marking for 1-pole and 2-pole units
‡15A, 125 VAC; 10A, 250 VAC
§See table on pages 694–695 for AC-rated switch information.
■Combinations of switches can be furnished.
*Purchase from Eaton's Wiring Devices.
☼ Not factory sealed.

2A

2A WST Enclosed Switches

Heavy Duty
30, 60, 100 Amp

NEMA 3R, 4, 12
Wet Locations
Watertight

Applications:

WST heavy duty enclosed switches are used in conduit systems:

- As a means of disconnecting motors, lighting and power circuits. A fusible type switch, when used, also provides for short circuit protection
- Indoors or outdoors in industrial areas, subways, railroad facilities or any other area that is subjected to dust, dirt, chemical vapors or moisture (rain or hosing)
- Either pole-mounted or on flat surfaces

Features:

- Enclosure, handle and other exterior parts are lightweight and corrosion resistant.
- Insulated – groundable type terminal block for grounded or ungrounded neutral supplied.
- Mounting lugs may be rotated 90 degrees or moved to the vertical centerline position for pole-mounting.
- Side hinged cover is retained in a closed position by compression spring draw-pull catches, which permits the opening or closing of the cover without having to use any tools. Lower cover latch is equipped for padlocking.
- The cover is interlocked with the body and operating mechanism to prevent the opening of the enclosure, except when the switch is in the "OFF" position.
- The operating handle may be padlocked in the "ON" or "OFF" position, thereby preventing unauthorized operation of the switch and/or opening of the enclosure. Up to three padlocks may be used.
- Switches are NEMA type HD heavy duty with visible blades, a quick make-and-break mechanism with reinforced, positive pressure-type blade and jaw construction. Fusible types have fuse clips with steel reinforcing springs of positive pressure type. Pressure connectors are used for wire connection.

Certifications and Complies:

- NEMA: 3R, 4, 12
- UL Standard: 98
- CSA Standard: C22.2 Nos. 4 & 14

Standard Materials:

- Enclosure – copper-free aluminum
- Operating handle – copper-free aluminum
- Other exterior parts – stainless steel

Standard Finishes:

- Copper-free aluminum – natural
- Stainless steel – natural

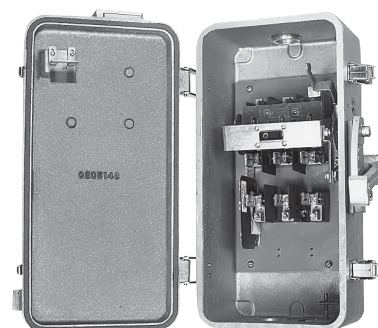
Options:

The following special options are available by adding suffix Cat. No.:

- | Description | Suffix |
|--|-------------|
| • Auxiliary switch, 600VAC-DC heavy duty pushbutton station rating, can be supplied, and its contacts will close after switch contacts close and open before switch opens..... | S483 |

Size Ranges:

- Conduit openings for 1" – 1½" inclusive are arranged for through feed. Removal of the threaded bushings permits use of the next larger conduit size.
- Other sizes and arrangements are available. Detailed information on request.



WST shown open

Electrical Rating Ranges:

- 2 and 3-pole; fusible or non-fusible; 240VAC, 600VAC and 250VDC
- 30, 60 and 100 amperes
- 3 to 75 hp

Ordering Information:

Amps	Conduit Opening	Standard HP Rating			240VAC 600VAC/250VDC Cat. #
		240VAC	250VDC	600VAC	
2-Pole No Fuse					
30	1	3	5	10	WST30254
60	1¼	10	10	25	WST60254
100	1½	15	20	40	WST10254
3-Pole No Fuse					
30	1	7½	5	20	WST30354
60	1¼	15	10	50	WST60354
100	1½	30	20	75	WST10354
2-Pole Fusible†					
30	1	3	5	10	WST3025‡
60	1¼	10	10	25	WST6025‡
100	1½	15	20	40	WST10025‡
3-Pole Fusible†					
30	1	7½	5	20	WST3035‡
60	1¼	15	10	50	WST6035‡
100	1½	30	20	75	WST10035‡

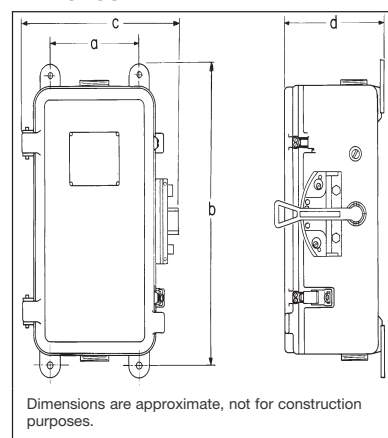
†Cartridge fuses are not included.

‡Arranged for NEC Class H fuses. May be field converted to NEC Class J fuses.

Approximate Dimensions

Amps	a	b	c	d
30	6⅞	20⅞	11¾	7¼
60	6⅞	20⅞	12¾	7¼
100	9⅞	26⅞	14⅞	8¼

Dimensions In Inches:



Crouse-Hinds
by **E•T•N**

W2ST Enclosed Switches

Heavy Duty
30, 60, 100 Amp

Cl. I, Div. 2, Groups B, C, D
NEMA 3, 12
Raintight

2A

Applications:

W2ST Factory Sealed Industrial Control Switches are used:

- In hazardous areas rated Class I, Division 2, Groups B, C and D
- In a rigid metallic conduit or cable system
- For surface or flush mounting adjacent to or remote from equipment being controlled
- In industrial applications such as chemical plants, wastewater treatment plants, oil and gas refineries, steel mills or any other areas where atmospheres may contain hazardous gases
- When controlling motors, pumps, valves, lighting and other circuits

Features:

- Enclosed devices are unfused, factory sealed motor circuit switches
- Exceeds NEC® wiring end room requirements for ease of wiring
- RSWP factory sealed industrial control switch, no external seals are required
- The cover is interlocked with the body and operating mechanism to prevent the opening of the enclosure, except when the switch is in the "OFF" position
- Mounting lugs may be rotated 90° or moved to the vertical centerline portion for pole mounting
- Side hinged covers are retained in a closed position by compression spring draw-pull catches, which permit the opening or closing of the cover without tools
- The switch operating handle may be padlocked in the "ON" or "OFF" position with up to three padlocks

Certifications and Compliances:

- NEC/CEC:
Class I, Division 2, Groups B, C and D
- Type: 3 and 12
- UL Standard 698
- cUL to CSA Standard C22.2 No. 14

Standard Materials:

- Enclosure and operating handle – copper-free aluminum
- Exterior hardware – stainless steel

Options:

Description **Suffix**
Auxiliary switch, factory sealed
10A, 600 VAC **S483**

Electrical Rating Ranges:

- 3-Pole Switch, No Fuse
- 30, 60 and 100 amperes
- 3 to 60 HP
- 600 VAC

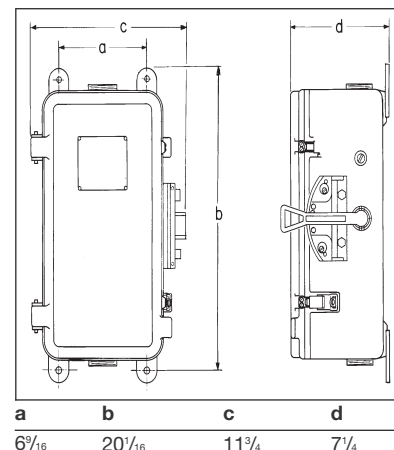
Ordering Information:

Amp	Switch	Cat. #
30	3-pole, No Fuse	W2ST30354
60	3-pole, No Fuse	W2ST60354
100	3-pole, No Fuse	W2ST10354

Horsepower Ratings:

W2ST	Single Phase				3 Phase			
	120V	240V	480V	600V	120V	240V	480V	600V
30A	3	7.5	20	25	7.5	15	30	40
60A	3	7.5	20	25	7.5	15	30	40
100A	5	10	25	30	10	20	40	60

Dimensions In Inches:



2A

2A Industrial Disconnect Switches

**30, 40, 60, and 100 Amp
600VAC
Non-metallic Enclosure**

NEMA Type 3, 4X, 12
Corrosion Resistant
Watertight

Applications:

- Used in manual "ON" and "OFF" control of single-phase or three-phase AC motors where overload protection is not required or is provided separately.
- Meet NEC Article 430 requirements for a separate disconnect means within sight of all motor loads.
- Offers the ability to lock directly wired motor loads in the "OFF" position to comply with OSHA lockout/tagout requirements.
- Meets stringent hosedown requirements.

Features:

- Enclosures are constructed from high impact thermoplastic, providing superior durability and corrosion resistance.
- Enclosure designed with tapered edges to keep liquids away from cover opening.
- Large pistol-grip handle provides easy gripping even with gloved hands.
- Lockable handle meets OSHA lockout/tagout requirements. Handles can be locked in the "OFF" position.
- Hidden hinge cover opens to 145°, making installation and maintenance quick and easy.
- Formed-in-place continuous gasket ensures NEMA 4X full perimeter sealing.
- Captive cover mounting screws.
- Brass enclosure assembly cover screw inserts allow for higher torque and prevent stripping.

Certifications and Compliances:

All units

- cUL
- NEMA Type 3, 4X, 12

Non-fused Units

- UL 508 – 40 & 60 amp
- UL 98 – 100 amp

Fused Units

- UL 98 – Enclosed Switch

Standard Materials:

- Enclosure – VALOX® thermoplastic
- Enclosure Gasket – Neoprene
- Handle – Impact-resistant Thermoplastic
- Cover Screws – Stainless Steel
- Screw Assembly Inserts – Brass
- Conduit Entries – See Table 1*



Ordering Information

Cat. #	Description
NRS30	40A, 600V, no auxiliary contacts
NRS30AX	40A, 600V, with auxiliary contacts
NRS30 FS	30A, 600V, with fusible switch for short circuit protection
NRS30AX FS	30A, 600V, with auxiliary contacts and fusible switch for short circuit protection
NRS60	60A, 600V, no auxiliary contacts
NRS60AX	60A, 600V, with auxiliary contacts
NRS60FS	60A, 600V, with fusible switch for short circuit protection
NRS60AX FS	60A, 600V, with auxiliary contacts and fusible switch for short circuit protection
NRS100	100A, 600V, no auxiliary contacts
NRS100AX	100A, 600V, with auxiliary contacts
NRS100 FS	100A, 600V, with fusible switch for short circuit protection
NRS100AX FS	100A, 600V, with auxiliary contacts and fusible switch for short circuit protection
NRS K1	40A - 100A nonfused auxiliary contact kit
NRS K2	60A - 100A fused auxiliary contact kit
NRS K3	30A fused auxiliary contact kit

Options:

- Auxiliary contacts for use with pilot light of PLC. 10A 600VAC 1 NO. & 1 N.C. Consult Factory.

*Hubs must be ordered separately. See Table 1.
VALOX® is a registered trademark of General Electric Co.

Industrial Disconnect Switches

NEMA Type 3, 4X, 12
Corrosion Resistant
Watertight

2A

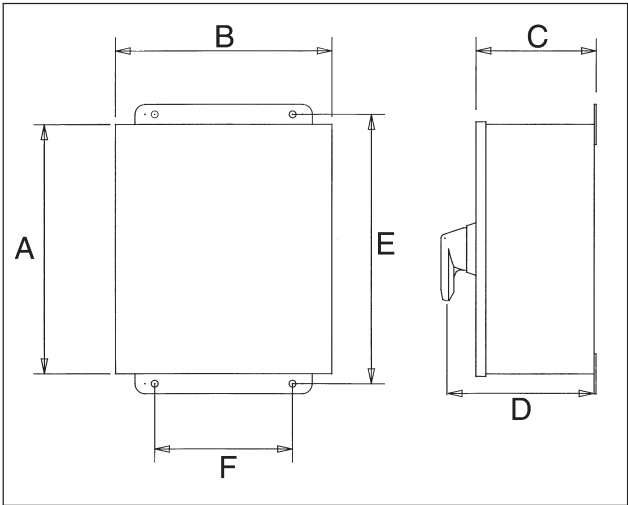
30, 40, 60, and 100 Amp
600VAC
Non-metallic Enclosure

Electrical Rating Ranges:

Switches	Horsepower Ratings:					
	Single Phase		Three Phase			
	120V	240V	208V	240V	480V	600V
40A Nonfused	1	5	10	10	20	25
60A Nonfused	2	7.5	15	15	30	30
100A Nonfused	5	15	25	30	50	50
30A Fused	2	3	7.5	7.5	15	20
60A Fused	-	-	15	15	30	50
100A Fused	-	-	25	30	60	75



Dimensions
In Inches:



Enclosure Type	A	B	C	D	E	F
40 Amp Nonfused	6.0	6.0	5.9	8.1	6.75	4.0
60 Amp Nonfused	8.0	6.0	5.9	8.1	8.75	4.0
100 Amp Nonfused	10.0	8.0	7.9	10.1	10.75	6.0
30 Amp Fused	10.0	8.0	7.9	10.1	10.75	6.0
60 Amp Fused	14.0	12.0	7.9	10.1	14.75	8.0
100 Amp Fused	14.0	12.0	7.9	10.1	14.75	8.0

2A

Table 1 - Conduit Entries
Ordering Information

Krydon®		Myers™ Zinc		Myers™ Stainless Steel	
Cat. #	Size	Cat. #	Size	Cat. #	Size
NHUB1	1/2"	STG 1	1/2"	SSTG 1	1/2"
NHUB2	3/4"	STG 2	3/4"	SSTG 2	3/4"
NHUB3	1"	STG 3	1"	SSTG 3	1"
NHUB4	1 1/4"	STG 4	1 1/4"	SSTG 4	1 1/4"
NHUB5	1 1/2"	STG 5	1 1/2"	SSTG 5	1 1/2"

**AC Only, Full Voltage
30A/40A/60A 600VAC
Without Overload Protection**

Applications:

Manual Contactors are used:

- For manual starting of motors up to 30 HP
- In damp or wet locations

Features:

- Compact enclosure meets NEMA 3R requirements
- Can be padlocked to help conform to OSHA lockout requirements
- Grounding terminal provides ground for box and cover
- Enclosed switch body does not expose contacts
- Double break butt-type silver alloy contacts provide long life
- Two 1/2", 3/4", 1" knockouts on bottom



Ordering Information:

Description	Amps 600V	Horsepower			Switch Cat. #	Switch & Enclosure Cat. #
		120V	240V	480/ 600V		
2 pole with screw terminals	30	2	5	7.5	6810U	6810W
3 pole with screw terminals	30	3	7.5	15	7810UD	7810WD
2 pole with screw & clamp terminals	40	3	5	15	MC240C	MC240C-3
2 pole with box lug terminals	40	3	5	15	MC240L	MC240L-3
2 pole with box lug terminals	60	3	5	15	MC260L	MC260L-3
3 pole with screw & clamp terminals	40	3	7.5	15 / 20	MC340C	MC340C-3
3 pole with box lug terminals	40	3	7.5	15 / 20	MC340L	MC340L-3
3 pole with box lug terminals	60	3	7.5	25 / 30	MC360L	MC360L-3

Certifications and Compliances:

- UL 508
- CSA Standard: C22.2 No. 14
- NEMA 3R

Standard Materials:

- .060" thick steel enclosure

Standard Finishes:

6810 / 7810 Series:

- Gray baked enamel finish

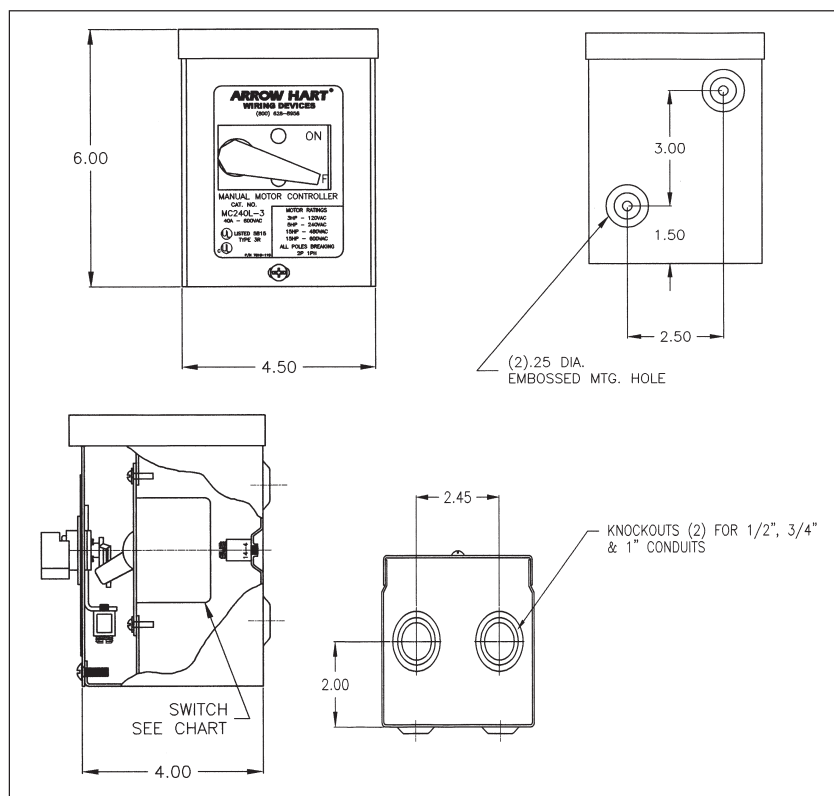
MC Series:

- Polyester urethane

Electrical Rating Ranges:

- 30A/40A/60A 600VAC, two pole, single phase
- 30A/40A/60A 600VAC, three pole, polyphase

Dimensions In Inches:



NST Disconnect Switches and Enclosures

Corrosion-Resistant
Dust-tight
Watertight
Weatherproof
NEMA 3, 4X, 12

2A

600VAC/250VDC Heavy Duty

Applications:

- NST disconnect switches are for use in disconnecting motor, lighting and other circuits.

Features:

- Enclosures are made of *Krydon*®, Eaton's Crouse-Hinds' high impact strength fiberglass-reinforced polyester material having excellent corrosion resistance and stability to heat.
- Unitized, strong and durable enclosure construction provides longer service life for equipment.
- Enclosure has hinged access door which opens 160° for easy wiring and maintenance. Three screws for door frame are hidden behind access door.
- Access door may be padlocked to prevent unauthorized access.

Options:

Description

- Auxiliary switch, 600 VAC-DC heavy duty pushbutton station rating, can be supplied. Its contacts will close after switch contacts close and open before switch opens.....
- Hubs (see "Note on Hubs") – see page 677
- Grounding plate or bushing – see page 677

Suffix

S483*



Disconnect switch with built-in *Krydon* material handle

Certifications and Compliances:

- NEMA: 3, 4X and 12
- UL Standard: 98
- CSA Standard: C22.2 No. 4

Electrical Rating Ranges:

- 240 VAC/250 VDC & 600 VAC
- 30, 60, 100 and 200 amp

Ordering Information:

To order an enclosure complete with disconnect switch, insert the manufacturer's symbol in the designated positions of the catalog number. Symbols are shown in the footnotes. Enclosures only can be ordered. Select from the listings below.

Amp Rating	Max HP Rating				Enclosure		
	AC Polyphase				DC using 2 poles only		
	200/240V	440/480V	550/600V	250V Max.	With Switch 240VAC/250VDC Cat. #	With Switch 600VAC Cat. #	Without Switch Cat. #
Non-Fusible							
30	7½	15	20	5	NST1018F ①30320	NST1018F ①30360	NST1018F ①
60	15	30	40	10	NST1018F ①60320	NST1018F ①60360	NST1018F ①
100	30	50	50	20	NST1426F ①10320	NST1426F ①10360	NST1426F ①
200	50	125	100	40	NST1426F2 ①20320†	NST1426F2 ①20360†	NST1426F2 ①†
Fusible‡							
30	7½	15	20	5	NST1018F ①30321	NST1018F ①30361	NST1018F ①
60	15	30	40	10	NST1018F ①60321	NST1018F ①60361	NST1018F ①
100	30	50	50	20	NST1426F ①10321	NST1426F ①10361	NST1426F ①
200	50	125	100	40	NST1426F2 ①20321†	NST1426F2 ①20361†	NST1426F2 ①†

① Disconnect Switches:

Manufacturer	Symbol	Switch Type
General Electric	G	Type QMW
Square D	D	Class 9422
Cutler-Hammer	W	Type DS

NOTE ON HUBS: The following number and sizes of hubs (not mounted) are included when disconnect switches are ordered complete. If enclosures only are ordered, hubs must be ordered separately (see "Options").

Switch Size	Number Included	Hub Size
30	2	¾
60	2	1¼
100	2	2
200	2	2½

*For Square D switches only.

†For General Electric switches only. Accommodates Class J fuses only. Not available with Cutler-Hammer "W" switch.

‡Fuse clips are arranged for Class H fuses and field modifiable for Class J fuses. For Class R fuses, consult Eaton's Crouse-Hinds.

Crouse-Hinds

by **EATON**

www.crouse-hinds.com US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2013 Eaton's Crouse-Hinds Business

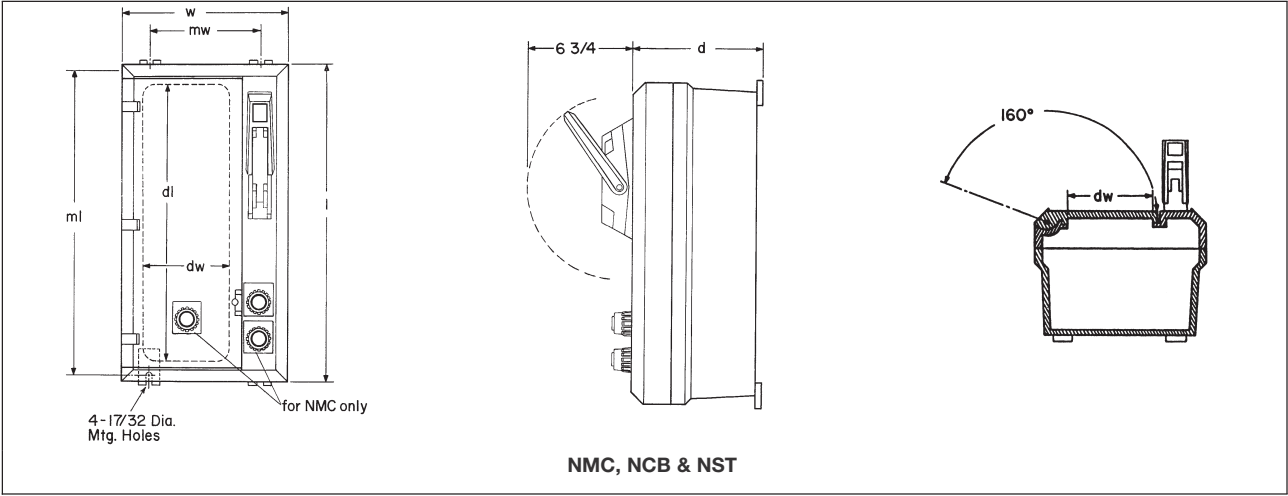
701

2A NST Disconnect Switches and Enclosures

600VAC/250VDC Heavy Duty

Corrosion-Resistant
Dust-tight
Watertight
Weatherproof
NEMA 3, 4X, 12

Dimensions*
In Inches:



2A

Cat. #	Outside Dimensions		<i>d</i>	Mounting Dimensions		Door Opening Dimensions	
	<i>l</i>	<i>w</i>		<i>mw</i>	<i>ml</i>	<i>dl</i>	<i>dw</i>
NST1018	19 ¹³ / ₃₂	11 ¹³ / ₃₂	8 ²³ / ₃₂	7 ⁷ / ₈	19 ³ / ₈	16 ⁷ / ₈	5 ¹¹ / ₁₆
NST1426	27 ¹³ / ₃₂	15 ¹³ / ₃₂	9 ²³ / ₃₂	11 ⁷ / ₈	27 ¹ / ₄	23 ¹¹ / ₁₆	9 ¹¹ / ₁₆

*Dimensions are approximate, not to be used for construction purposes.

Hazardous

Description	Page No.
Clocks	
TCH	see page 711
Telephones	
ETW	see page 712
Ex-ResistTel, FernTel IP	see page 713
Thermostats	
HRC	see page 709
Heaters	
EXH	see pages 704–705
XC	see pages 707–708

Applications:

EXH explosionproof electric heaters are used:

- In areas made hazardous by the presence of flammable gases and vapors, and combustible dusts
- For rugged locations including: oil refineries, petrochemical plants, rigs, pumping stations, turbine compressors, pulp and paper mills, coal mines, grain elevators, etc.
- In areas where flammable vapors or gases or highly combustible dusts may be present due to accidental or abnormal conditions
- For standby heat to prevent process heat loss, or for personnel comfort during maintenance/repair operations

Features:

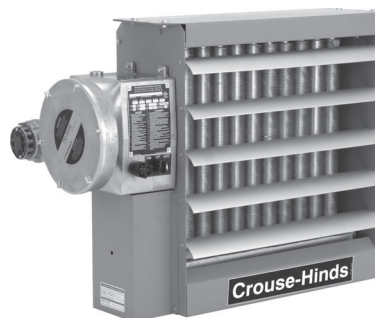
- Split fan guard for easy access to fan
- Compact design makes handling during installation easy
- Evacuated cores heat up quickly with even heat distribution
- Larger models offer greater kilowatt range providing more economical means to heat large areas
- Permanently sealed cores improve reliability and make field servicing easier
- Control box provides easy access for installation and maintenance

Certifications and Compliances:

- Class I, Division 1 & 2, Groups C, D
- Class II, Division 1, Groups E, F, G
- Class II, Division 2, Groups F, G
- NEMA: 7CD, 9EFG
- UL Standard: 823
- CSA Standard: C22.2 Nos. 25, 30, 46

Standard Materials and Finishes:

- Fan – Aluminum blade; steel spider and hub with $\frac{5}{8}$ in. (15.875 mm.) bore
- Core – Steel with integral aluminum fins, vacuum charged and hermetically sealed
- Heating Elements – Three long life, low watt-density, high grade metal sheathed elements
- Heat Transfer Fluid – Long life formulated ethylene glycol and water, freeze protected to -49°F (-45°C)
- Cabinet Material – 14 gauge (0.075 in.) (1.90 mm) steel; epoxy coated with 5 stage pre-treatment including iron phosphate
- Conduit Material – Heavy walled, 0.122 in (3.1 mm.) steel cadmium plated



Heater shown has optional built-in thermostat.

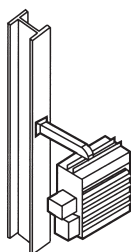
Options:

The following special options are available:

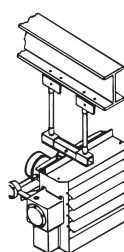
Description	Suffix
Built-in disconnect switch	D
Built-in pilot light	P
3-way switch	S
Built-in thermostat	T
Built-in HRC1 explosionproof thermostat	HRC

Accessories:

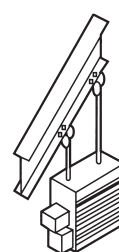
- Basic mounting kit – suitable for applications where the support arm can be bolted or welded directly to structural steel or concrete.
Cat. # BMK-EXH5 (insert fan size: 12, 16 or 20)
- Wall mounting kit – suitable for mounting on Z sections.
Cat. # WMK-EXH5 (insert fan size: 12, 16 or 20)
- Hanging mounting kit – simple and economical if adequate overhead structure exists. Requires $\frac{1}{2}$ " pipe, cut and threaded — not supplied.
Cat. # HMK-EXH5
- Swivel hanging mount kit – swivels 360° . Requires $\frac{1}{2}$ " pipe, cut and threaded — not supplied.
Cat. # SHMK-EXH5 (insert fan size: 12, 16 or 20)
- Pipe mounting kit – useful in buildings with insufficient strength to use other types of mounts. requires 3" pipe.
Cat. # PMKEXH5 (insert fan size: 12, 16 or 20)



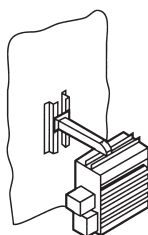
BMK Basic Mounting Kit



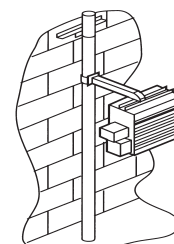
SHMK Swivel Hanging Mounting Kit



HMK Hanging Mounting Kit



WMK Wall Mounting Kit



PMK Pipe Mounting Kit

Crouse-Hinds
by **E•T•N**

3A

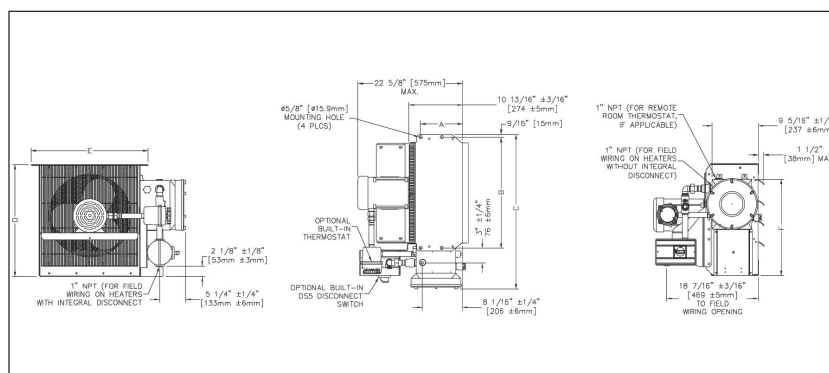
Specifications:

	Nominal kW	EXH512				EXH516		EXH520		
		3	5	7.5	10	15	20	25	30	35
Maximum Altitude	(ft.) (m.)	12,000 3,658	8,000 2,438	10,000 3,048	7,000 2,134	10,000 3,048	7,000 2,134	10,000 3,048	7,000 2,134	6,000 1,829
Air Delivery @70°F @ 21°C	(CFM) (m³/hr)	500 850	500 850	850 1444	850 1444	1750 2973	1750 2973	3600 6116	3600 6116	3,950 6,711
Horizontal Throw	(ft.) (m.)	15 4.6	15 4.6	30 9.1	30 9.1	40 12.2	40 12.2	70 21.3	70 21.3	70 21.3
Max. Mounting Height	(ft.) (m.)	7 2.1	7 2.1	10 3.0	10 3.0	10 3.0	10 3.0	20 6.1	20 6.1	20 6.1
Motor Power	(HP) (kW)	½ 0.187	½ 0.187	½ 0.187	½ 0.187	½ 0.187	½ 0.187	½ 0.373	½ 0.373	½ 0.373
Fan Diameter	(in.) (mm.)	12 305	12 305	12 305	12 305	16 406	16 406	20 508	20 508	20 508
Net Weight	(lbs.) (kg.)	140 63.5	140 63.5	140 63.5	140 63.5	168 76.2	168 76.2	201 91.2	201 91.2	201 91.2
Shipping Weight	(lbs.) (kg.)	194 88	194 88	194 88	194 88	218 98.9	218 98.9	252 114.3	252 114.3	252 114.3

Temperature Limitations Operational; -49°F to 176°F (-45°C to 80°C), short term to 248°F (120°C).

Dimensions

In Inches:



Dimension		2.5 - 10 kW	12.5 - 20 kW	20.9 - 35 kW	Dim. Tolerance ±
A	in.	8 ⁷ / ₁₆	8 ⁷ / ₁₆	8 ⁷ / ₁₆	⅛
	mm	215	215	215	3
B	in.	18 ³ / ₁₆	22 ⁹ / ₁₆	26 ¹ / ₄	⅛
	mm	462	566	667	3
C	in.	27	31	35	³ / ₁₆
	mm	686	787	889	4
D	in.	18 ¹ / ₂	22 ¹ / ₂	26 ¹ / ₂	⅛
	mm	470	572	674	3
E	in.	19 ⁷ / ₁₅	23 ⁷ / ₁₆	27 ⁷ / ₁₆	³ / ₈
	mm	494	596	697	10
F	in.	17 ¹ / ₂	19 ¹ / ₂	21 ¹³ / ₁₆	⁵ / ₁₆
	mm	444	495	554	8

Dimensional tolerances $\pm 1/8"$ (3.2mm) unless otherwise specified.

3A

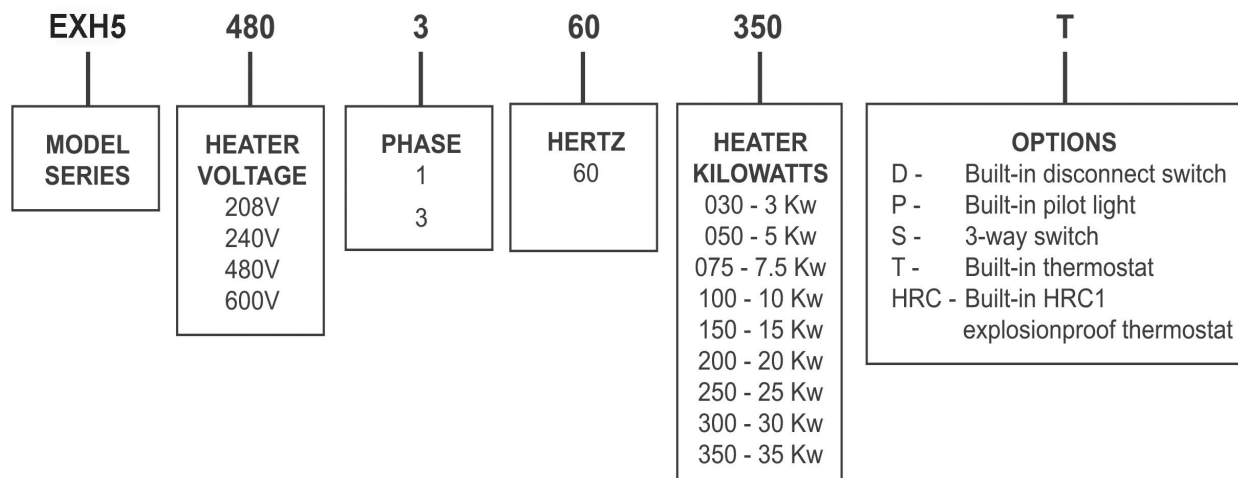
EXH Series Explosionproof Electric Air Heaters

Cl. I, Div. 1 & 2, Groups C, D Explosionproof
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G
NEMA 7CD, 9EFG

Ordering Information:

	Nominal Wattage (kW)	Voltage	Phase	Cat. #	Maximum Total Current (Amperes)	Temperature Rise		Heat Output BTU/Hr.
						°F	°C	
EXH512	3.0	208	1	EXH5-208160-030	14.4	11.2	6.2	10,250
	3.0	208	3	EXH5-208360-030	8.3	11.2	6.2	10,250
	3.0	240	1	EXH5-240160-030	12.5	11.2	6.2	10,250
	3.0	240	3	EXH5-240360-030	7.2	11.2	6.2	10,250
	3.0	480	1	EXH5-480160-030	6.3	11.2	6.2	10,250
	3.0	480	3	EXH5-480360-030	3.6	11.2	6.2	10,250
	3.0	600	3	EXH5-600360-030	2.9	11.2	6.2	10,250
	5.0	208	1	EXH5-208160-050	24.0	18.6	10.3	17,100
	5.0	208	3	EXH5-208360-050	13.9	18.6	10.3	17,100
	5.0	240	1	EXH5-240160-050	20.8	18.6	10.3	17,100
	5.0	240	3	EXH5-240360-050	12.0	18.6	10.3	17,100
	5.0	480	1	EXH5-480160-050	10.4	18.6	10.3	17,100
	5.0	480	3	EXH5-480360-050	6.0	18.6	10.3	17,100
	5.0	600	3	EXH5-600360-050	4.8	18.6	10.3	17,100
	7.5	208	1	EXH5-208160-075	36.1	27.9	15.5	26,600
	7.5	208	3	EXH5-208360-075	20.8	27.9	15.5	26,600
	7.5	240	1	EXH5-240160-075	31.3	27.9	15.5	26,600
	7.5	240	3	EXH5-240360-075	18.0	27.9	15.5	26,600
	7.5	480	1	EXH5-480160-075	15.6	27.9	15.5	26,600
	7.5	480	3	EXH5-480360-075	9.0	27.9	15.5	26,600
EXH516	7.5	600	3	EXH5-600360-075	7.2	27.9	15.5	26,600
	10.0	208	3	EXH5-208360-100	27.8	37.2	20.7	34,150
	10.0	240	1	EXH5-240160-100*	41.7	37.2	20.7	34,150
	10.0	240	3	EXH5-240360-100	24.1	37.2	20.7	34,150
	10.0	480	1	EXH5-480160-100	20.8	37.2	20.7	34,150
	10.0	480	3	EXH5-480360-100	12.0	37.2	20.7	34,150
	10.0	600	3	EXH5-600360-100	9.6	37.2	20.7	34,150
EXH520	15.0	240	3	EXH5-240360-150	36.1	27.1	15.1	51,200
	15.0	480	1	EXH5-480160-150	31.3	27.1	15.1	51,200
	15.0	480	3	EXH5-480360-150	18.0	27.1	15.1	51,200
	15.0	600	3	EXH5-600360-150	14.4	27.1	15.1	51,200
	20.0	480	1	EXH5-480160-200	41.7	36.1	20.1	68,300
	20.0	480	3	EXH5-480360-200	24.1	36.1	20.1	68,300
EXH520	20.0	600	3	EXH5-600360-200	19.2	36.1	20.1	68,300
	25.0	480	3	EXH5-480360-250	30.1	45.2	25.1	85,400
	25.0	600	3	EXH5-600360-250	24.1	45.2	25.1	85,400
	30.0	480	3	EXH5-480360-300	36.1	26.4	14.6	102,360
	30.0	600	3	EXH5-600360-300	28.9	26.4	14.6	102,360
EXH520	35.0	480	3	EXH5-480360-350	42.1	30.7	17.1	119,450
	35.0	600	3	EXH5-600360-350	33.7	30.7	17.1	119,450

Catalog Number Example:



* Not available with built-in disconnect switch (option D).

XC Series Explosionproof Electric Heaters

NEC: Cl. I, Div. 1 & 2, Groups B*, C & D
IEC: Cl. I, Zones 1 & 2, Group IIB & H₂*
NEMA: 7B*CD

3A

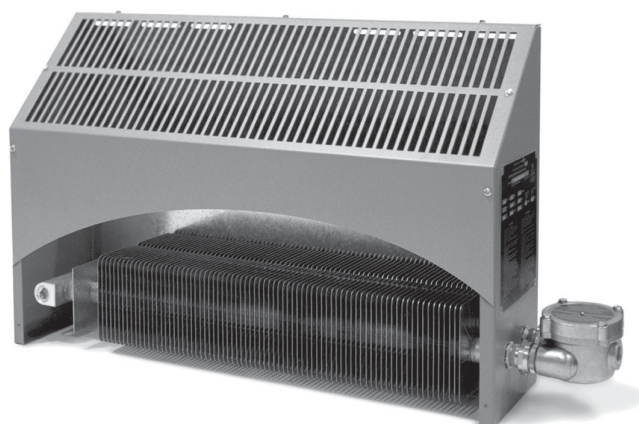
Applications:

Single phase XC explosionproof electric heaters are used:

- In areas where flammable liquids, gases or vapors are present
- For rugged locations including:
 - Petroleum refineries, gasoline storage and dispensing areas
 - Wastewater treatment plants
 - Areas that use flammable liquids for cleaning parts in dip tanks
 - Petrochemical plants
 - Paint spraying areas
 - Aircraft hangars and fuel servicing areas
 - Hydrogen fuel cell and battery storage facilities
 - Natural gas plants
- In areas where flammable vapors or gases may be present due to accidental or abnormal conditions
- For standby heat to prevent process heat loss or for personnel comfort during maintenance/repair operations

Standard Features:

- Sloped-top cabinet prevents objects that restrict airflow from being set on top
- Corrosion-resistant design with no exposed copper or brass – suitable for H₂S environments
- High-velocity airflow heats up area faster with better heat distribution
- 14-gauge steel cabinet for rugged reliability
- Short cabinet lengths take up less wall and floor space
- Optional built-in thermostat (Class I, Division 1, Groups C & D, and Zone 1, Group IIB models) reduces field installation costs
- *Incoloy*® 840 heating elements have longer life expectancy
- Radial-embossed aluminum plate fins warp less for better heat transfer
- Galvanized steel mounting brackets for quick installation



Certifications and Compliances:

- NEC:
 - Class I, Divisions 1 & 2, Groups B*, C, D
- IEC:
 - Class I, Zones 1 & 2, Group IIB + H₂*
- NEMA: 7B*CD
- UL Standard: 823
- CSA Standard: C22.2 Nos. 25, 30, 46
- Temperature Code: T2A – 280°C (536°F)

Standard Materials and Finishes:

- Heating elements – resistance wire embedded in a magnesium oxide refractory and sheathed in an *Incoloy*® 840 tube
- Finned tube assembly – aluminum tube with radial-embossed aluminum plate fins
- Cabinet – 14-gauge (0.075"/1.90 mm) steel, green-gray epoxy powder-coated front and side panels, galvanized steel back panel

Accessories and Options:

- Built-in thermostat for 120-, 208-, 240-, 277- or 480-volt applications (see ordering information on next page)
- Remotely mounted HRC85 explosionproof thermostat using *Honeywell*® control for 45°F– 85°F heating range (order separately)

Specifications:

Nominal kW	1.2	1.8	3.6	4.8	7.6
Shipping Weight (lbs.) (kg)	61.3 27.8	61.3 27.8	61.3 27.8	88.4 40.1	104.3 47.3
Enclosures	NEMA Type 7. For dry indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow.				
Mounting Brackets	Two 14-gauge galvanized steel brackets.				
Heating Elements	Two <i>Incoloy</i> ® 840-sheathed elements.				
Optional Built-In Thermostat	Explosionproof room thermostat with 10 settings.				
Cabinet Material	14-gauge (0.075"/1.90 mm) steel. Rear panel is galvanized. Front and side panels are baked green-gray epoxy powder coated with five-stage pre-treatment, including iron phosphate.				
Temperature Code Rating	T2A – 280°C (536°F)				
Temperature Limitations					
Operational	–45°C to 40°C (–49°F to 104°F)				
Storage	–45°C to 80°C (–49°F to 176°F)				

*Hydrogen applications only apply to heaters without built-in thermostats.

Crouse-Hinds
by **E.T.N.**

3A XC Series Explosionproof Electric Heaters

NEC: Cl. I, Div. 1 & 2, Groups B*, C & D
IEC: Cl. I, Zones 1 & 2, Group IIB & H₂*
NEMA: 7B*CD

Ordering Information:

Without built-in room thermostat –
Class I, Div. 1 & 2, Groups B, C & D;
Zones 1 & 2, Group IIB + H₂

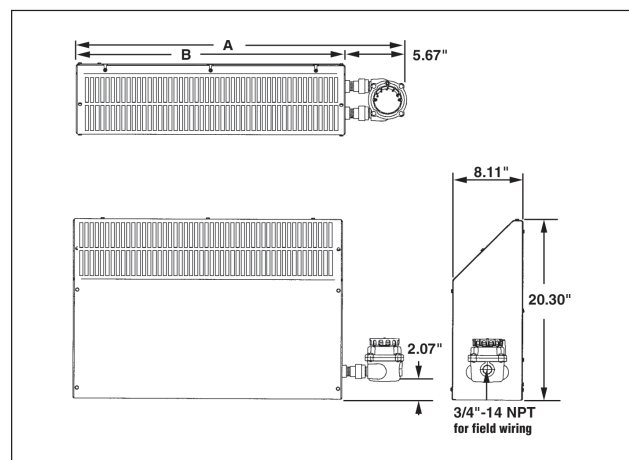
Cat. #	Unit Wattage (kW)	Unit Output (BTU/Hr)	Unit Voltage (Volts)	Unit Current (Amps)	Maximum Circuit Fuse (Amps)*
XC A1 N0	1.2	4097	120	10.0	15
XC A2 N0	1.2	4097	208	5.8	15
XC A3 N0	1.2	4097	240	5.0	15
XC A4 N0	1.2	4097	480	2.5	15
XC A5 N0	1.2	4097	600	2.0	15
XC A6 N0	1.2	4097	277	4.3	15
XC B1 N0	1.8	6146	120	15.0	20
XC B2 N0	1.8	6146	208	8.7	15
XC B3 N0	1.8	6146	240	7.5	15
XC B4 N0	1.8	6146	480	3.8	15
XC B5 N0	1.8	6146	600	3.0	15
XC B6 N0	1.8	6146	277	6.5	15
XC C2 N0	3.6	12292	208	17.3	20
XC C3 N0	3.6	12292	240	15.0	20
XC C4 N0	3.6	12292	480	7.5	15
XC C5 N0	3.6	12292	600	6.0	15
XC C6 N0	3.6	12292	277	13.0	15
XC D2 N0	4.8	16389	208	23.1	25
XC D3 N0	4.8	16389	240	20.0	25
XC D4 N0	4.8	16389	480	10.0	15
XC D5 N0	4.8	16389	600	8.0	15
XC D6 N0	4.8	16389	277	17.3	20
XC E2 N0	7.6	25950	208	36.5	40
XC E3 N0	7.6	25950	240	31.7	35
XC E4 N0	7.6	25950	480	15.8	20
XC E5 N0	7.6	25950	600	12.7	15
XC E6 N0	7.6	25950	277	27.4	30

*Or equivalent breaker as per National Electrical Code and Canadian Electrical Code

1. Remote-mounted explosionproof room thermostats are not suitable for Group B & IIC applications. Remote contactors are also required on all 600-volt heaters and heaters with a current draw greater than 22 amps (supplied and installed by others).
2. Remote mounted explosionproof room thermostats suitable for Group B, IIB + H₂ applications are a special-order item.
3. Operation at lower than rated voltages will result in reduced kW output and amp draw.
Actual Output (kW) = [(Supply Voltage)² ÷ (Rated Voltage)²] x Rated Unit Wattage (kW)

Dimensions

In Inches:



With built-in room thermostat –
Class I, Div. 1 & 2, Groups C & D;
Zones 1 & 2, Group IIB

Cat. #	Unit Wattage (kW)	Unit Output (BTU/Hr)	Unit Voltage (Volts)	Unit Current (Amps)	Maximum Circuit Fuse (Amps)*
XC A1 B1	1.2	4097	120	10.0	15
XC A2 B2	1.2	4097	208	5.8	15
XC A3 B3	1.2	4097	240	5.0	15
XC A4 B4	1.2	4097	480	2.5	15
XC A6 B6	1.2	4097	277	4.3	15
XC B1 B1	1.8	6146	120	15.0	20
XC B2 B2	1.8	6146	208	8.7	15
XC B3 B3	1.8	6146	240	7.5	15
XC B4 B4	1.8	6146	480	3.8	15
XC B6 B6	1.8	6146	277	6.5	15
XC C2 B2	3.6	12292	208	17.3	20
XC C3 B3	3.6	12292	240	15.0	20
XC C4 B4	3.6	12292	480	7.5	15
XC C6 B6	3.6	12292	277	13.0	15
XC D3 B3	4.8	16389	240	20.0	25
XC D4 B4	4.8	16389	480	10.0	15
XC D6 B6	4.8	16389	277	17.3	20
XC E4 B4	7.6	25950	480	15.8	20

Heater kW Rating	A Dimensions	B Dimensions
1.2 - 3.6	37.0" (940mm)	31.34" (796mm)
4.8	55.125" (1400mm)	49.45" (1256mm)
7.6	65.125" (1654mm)	59.49" (1511mm)

*Hydrogen applications only apply to heaters without built-in thermostats.

HRC Thermostats with Honeywell Control

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 7CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

3A

Applications:

HRC thermostats with Honeywell control are used:

- For heavy duty line voltage thermostats to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems. If larger motors than listed are to be controlled, relays or magnetic motor starters must be interconnected between motors and thermostats
- In specific hazardous atmospheres such as encountered in oil refineries, chemical plants, paint and varnish manufacturing plants, certain hazardous metal finishing areas, coal processing locations, granaries and grain processing plants

Features:

- A heavy duty snap switch is mounted in the enclosure; the temperature sensitive element is mounted on the external surface of the cover and actuates the switch through a shaft and bearing mechanism
- An external knob permits temperature setting within calibrated range; the knob is removable to prevent unauthorized adjustment; room ambient is indicated on thermometer at front

Certifications and Complies:

- NEC/CEC:
 - Class I, Division 1 & 2, Groups C, D
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- NEMA/EEMAC: 7CD, 9EFG, 12
- UL Standard: 1203
- CSA Standard: C22.2 No. 30

Standard Materials:

- Feraloy® iron alloy

Standard Finishes:

- Electrogalvanized and aluminum acrylic paint

Size Ranges:

- Hubs – 3/4" through-feed



Electrical Rating Ranges:

- 120 / 240 VAC
- 50 / 60 hertz
- Full load current in amperes:

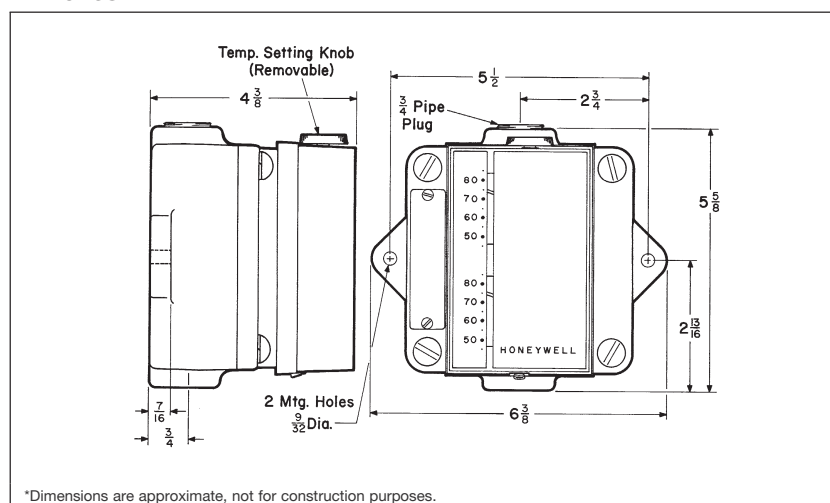
	120 VAC	240 VAC
Heating	10.2	6.5
Cooling	7.4	4.0

Ordering Information:

Temperature Range	Non-Adjustable Operating Differential (approx.)	Cat. #†
45 – 85°F	1° F	HRC85

†Furnished with thermostat and thermometer.

Dimensions* In Inches:



3A HRC Bimetal Thermostat

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

Applications:

HRC Bimetal Thermostats are used:

- To control heating only, cooling only or ventilation systems in demanding industrial environments
- In specific hazardous atmospheres such as encountered in oil refineries, chemical plants, paint and varnish manufacturing plants, coal processing locations, waste storage facilities, pulp and paper mills, granaries and grain processing plants or any other location where specific explosive gases or dusts are present

Features:

- Bimetal sensing element that is fast acting, reliable and unaffected by altitude
- Compact, lightweight design makes it easy to install
- No exposed copper or brass parts for excellent resistance to corrosion
- Feed-through design for easy installation
- Durable all aluminum exterior
- Available for heating only or heating or cooling/ventilation applications

Certifications and Complies:

- NEC/CEC:
 - Class I, Division 1 & 2, Groups C, D
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- UL Standard: 1203
- CSA Standard: C22.2 No. 30

Standard Materials:

- Copper-free aluminum

Standard Finishes:

- Natural

Size Ranges:

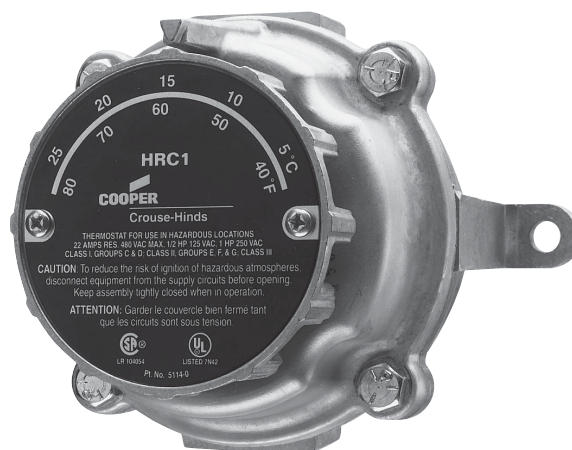
- Conduit opening – 3/4" hub

Electrical Ratings:

- 480 VAC max
- 1/2 HP @ 120 VAC
- 1 HP @ 250 VAC
- 22 amps Res.

Temperature Range:

- 36°F to 82°F (2°C to 28°C)
- Temperature differential: 2.5°F (1.5°C)

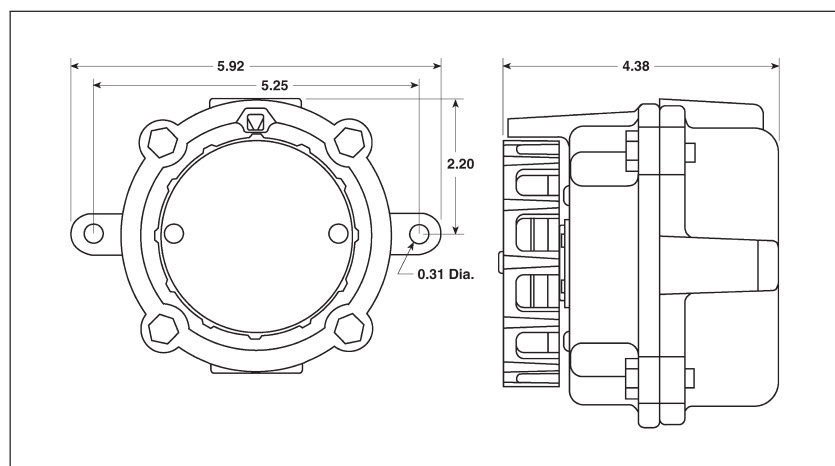


Ordering Information

Hub Size	Description	Cat. #
3/4	Single Pole, Single Throw (heating only)	HRC1
3/4	Single Pole, Double Throw (heating or cooling/ventilation applications)	HRC2

Dimensions

In Inches:



Crouse-Hinds
by **Eaton**

TCH Electric Clocks

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

3A

Factory-sealed

Applications:

Type TCH electric clocks are used:

- In oil refinery control rooms, hospital operating rooms, chemical plants, grain handling and processing plants and other similar locations where specific hazardous atmospheres may exist

Features:

- Sheet steel case may be used where environmental conditions are not severe; electric motor and connections are contained in corrosion-resistant enclosure; dials are 13" in diameter; reset knob protrudes from bottom of case
- Disassembly for installation and maintenance is easily performed; the motor housing is factory-sealed, with no external seals required

Certifications and Compliances:

- NEC:
 - Class I, Division 1 & 2, Groups C, D
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- UL Standard: 1203

Standard Materials:

- Clock body and cover – sheet steel
- Motor housing – copper-free aluminum

Standard Finishes:

- Aluminum – aluminum acrylic paint
- Sheet steel – baked aluminum enamel

Size Ranges:

- Hubs – 1" through-feed

Electrical Rating Ranges:

- 110VAC, 60 hertz
- Self-starting synchronous motor – 3 watts

Options:

The following special options are available:

Description **Suffix**
Sheet metal band notched for conduit, can be supplied for enclosing gap between wall surface and back of case **See listings**



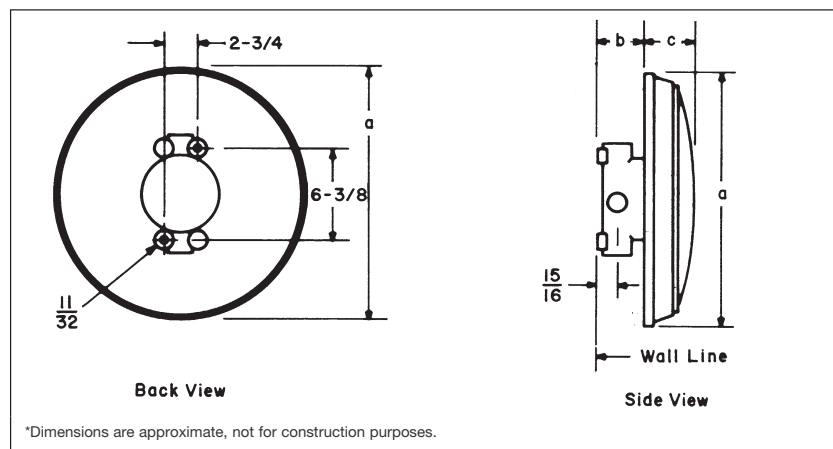
Sheet Steel Case

Ordering Information:

Enclosure with Clock Motor	Hub Size	Style	Cat. #	Enclosing Sheet Metal Band Cat. #
110 VAC 60 hertz Self-Starting Synchronous (3 Watts)	1"	With Sheet Steel Case Surface Mount	TCH2220	TCH202

Dimensions*

In Inches:



Cat. #	a	b	c
TCH2220	17	2 7/8	3 7/16

Crouse-Hinds

by EATON

www.crouse-hinds.com US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2013 Eaton's Crouse-Hinds Business

711

3A ETW Telephones

Cl. I, Div. 1 & 2, Groups B, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Applications:

ETW series telephones are used:

- For communication in areas which may be hazardous due to the presence of flammable gases or vapors, and/or combustible dusts
- In chemical plants, oil refineries, bulk loading stations, paint and varnish manufacturing plants, grain processing and similar industries

Features:

- Modern styled, pushbutton wall-mount unit is very rugged in design, suitable for the harshest industrial applications
- Large, easy to read keyboard allows gloves-on operation
- Cast copper-free aluminum housing, with baked on powder coat finish, is highly resistant to corrosive atmospheres
- Units are tone or pulse compatible and offer superior audio clarity
- Handset cord features a pin-type connector for easy field replacement; handset circuit is intrinsically safe
- Up to ten units can be connected on one line



ETW401

Certifications and Compliances:

- NEC/CEC:
Class I, Divisions 1 & 2, Groups B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
- UL Standard: 1203, 698
- CSA Standard: C22.2 No. 30
- FCC Approved

Standard Materials:

- Enclosure – copper-free aluminum
- Handset – high impact plastic

Standard Finishes:

- Enclosure – baked powder paint (safety blue)

Accessories:

- A standard volume explosionproof ringer (**ETR1**) is available, see page 714 for listing.
- For locations with a high level of ambient noise, a louder ringer can be installed. An ESR bell or ETH horn may be used by installing an ETC relay between the telephone line switch and the bell or horn. The relay coil is energized by the ringing current and the relay contacts control a separate power source to the signal.

Ordering Information:

Description

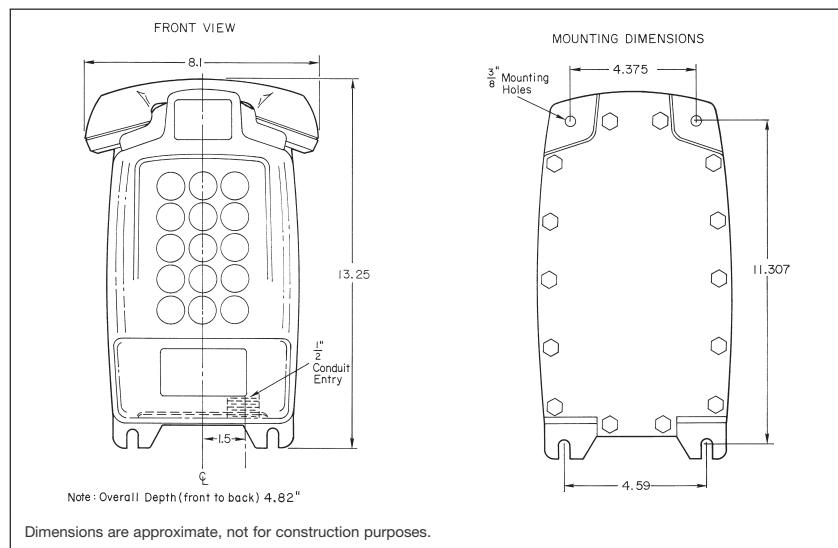
Phone w/ handset
Replacement handset (10' cord) ETW
Replacement handset (20' cord) ETW
Phone w/ headset
Phone push-to-talk handset
Replacement headset
Explosionproof ringer

Cat.

ETW401
ETW:301SC
ETW:301SC 20
ETW401 HS
ETW401 PB
ETW:P7200
ETR1

Dimensions

In Inches:



Telephones for Hazardous Areas

Ex-ResistTel, FernTel IP - Hazardous Area Communication Series

Applications:

Industrial telephones developed specifically for the harsh and hazardous environments are found in:

- Oil refineries, petrochemical plants, offshore platforms, marine applications and industrial manufacturing.

These telephones can handle large temperature differences found outdoors, high humidity and exposure to sea water, as well as heavy mechanical wear and tear.

Features:

Ex-ResistTel – Hazardous Analog Telephone

- Fully encapsulated electronics in robust glass fiber-reinforced polymer housing with ½” NPT conduit entries and Type 4X (IP66) protection
- Programmable with alphanumeric display and a 21-piece stainless steel lighted keypad
- Hermetically sealed non-contact hook sensing switch improves system reliability
- Captive cover screws prevent loss during installation
- Ventilation/pressure balancing plug eliminates moisture collection inside the enclosure
- 10 ringing melodies, maximum 50 directory entries; multiple languages available
- Operating Environment from -20°C to +40°C
- Ringer output: 90dB; noise suppression: 3dB

FernTel IP – Hazardous Voice over Internet Protocol Telephone

- Corrosion resistant polycarbonate housing with ½” NPT conduit entries and Type 3 (IP65) protection
- Programmable with alphanumeric illuminated display and a 21-piece lighted keypad
- Hermetically sealed non-contact hook sensing switch improves system reliability
- Captive cover screws prevent loss during installation
- Power supply: PoE (power over ethernet) with no separate power supply required
- Operating Connection: 10/100 BASE-T Ethernet LAN
- Protocol: H323 and SIP
- Operating Environment from -20°C to +55°C
- Ringer Output: 95dB



Ex-ResistTel



FernTel IP

Certifications and Compliances:

Ex-ResistTel

- Class I, Division 2, Groups A, B, C, D T6
- Type 4X, IP66 to EN 60529
- UL & cUL
- FCC: Parts 15 and 68 hearing aid compatible
- TIA-968-A & CS-03 Part 1

FernTel IP

- Class I, Division 2, Groups A, B, C, D T5
- Type 3, IP65 to EN 60529
- UL & cUL


Standard Materials:

- Enclosure – Glass fiber-reinforced polymer (Ex-ResistTel); Polycarbonate (FernTel IP)
- Keypad, Faceplate, Trip, Armored Cord – 316 SST

Dimensions & Weights:

- Ex-ResistTel – 10.5” x 9” x 5.3”; 12 lbs
- FernTel IP – 12” x 8” x 5”; 5.5 lbs

Ordering Information:

	Model	Type	Description	Color	Cat. #
	Ex-ResistTel	Analog	Keypad & Display	Black	11286101110
	FernTel IP	VoIP	Spiral Cord	Yellow	11241141
	FernTel IP	VoIP	Armored Cord	Yellow	11243141

3A Telephone Accessories

Cl. I, Div. 1 & 2, Groups B*, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Features:

- ETC232 power relays are used with ESR bells and ETH, W2H or WH horns; the relay coil is energized by the telephone ringing circuit, and the relay contacts control the separate 115VAC, 60 hertz power source
- ETR1 external ringer for ETW401 telephone; for low ambient noise areas, ring tone level is similar to a general use telephone; includes a ring detect relay which is powered by the telephone line voltage, (maximum 90VAC)

Certifications and Compliances:

- NEC/CEC:
 - Class I, Division 1 & 2, Groups B*, C, D
 - Class II, Division 1, Groups E, F, G
 - Class II, Division 2, Groups F, G
 - Class III
- UL Standard: 1203
- CSA Standard: C22.2 No. 30

Standard Materials:

- Bodies – copper-free aluminum
- Covers – copper-free aluminum

Standard Finishes:

- Aluminum – baked epoxy powder paint

Power Relay



Description	Rating	Hub Size	Cat. #
Relay for Horn Signal	10A 115VAC 60 hertz	3/4"	ETC232

Ringer



Description	Hub Size	Cat. #
Normal volume external ringer for ETW40 telephone	3/4"	ETR1

*For use in Group B hazardous areas, seals must be installed within 1 1/2" of each conduit entrance.

Description	Page No.
XDT Hazardous Location Dry-Type Transformers	see pages 716–718



4A XDT Hazardous Location Dry-Type Transformers

Cl. I, Div. 2, Groups A, B, C, D NEMA 3R, 4X

Resin Encapsulated Dry-Type Series

Eaton's Crouse-Hinds Hazardous Location Dry-Type Transformers provide safe and efficient electric power distribution in the most extreme harsh and hazardous locations.

Applications:

Eaton's Crouse-Hinds Hazardous Location Dry-Type Transformers are designed to operate where volatile flammable liquids or gases are handled, processed, or used, and where ignitable concentrations of gases or vapors are normally prevented by positive mechanical ventilation, such as:

- Refineries
- Chemical and petrochemical plants
- Mining
- Corrosive process facilities
- Indoor and outdoor industrial applications

Features:

- Resin-encapsulated core-coil assembly for reliable performance in extreme environments
- NEMA 3R and 4X enclosures provide essential ingress protection
- 180°C insulation system with 115°C winding temperature rise creates optimal loading capabilities
- Ratings: single phase - 0.5 kVA through 37.5 kVA; three phase - 3 kVA through 150 kVA
- Custom configurations available to meet customer specifications

Certifications and Compliances:

- Class I, Division 2, Groups A, B, C, D
- NEMA 3R, 4X
- UL Standard 1604
- cUL to C22.2 No. 66 and C22.2 No. 213-M1987

Standard Materials:

- Enclosure – painted steel (NEMA 3R) or 316 stainless steel (NEMA 4X)
- Windings – aluminum or copper



Electrical Ratings:

- Single phase: 0.5 to 37.5 kVA
- Three phase: 3 to 150 kVA
- 180°C insulation
- 115°C winding temperature rise
- Frequency: 60 Hz
- Impedance: 2 to 5%

Options:

Description	Suffix
NEMA 4X	X
Aluminum windings (three phase only)	AL

XDT Hazardous Location Dry-Type Transformers

Cl. I, Div. 2, Groups A, B, C, D NEMA 3R, 4X

4A

Resin Encapsulated Dry-Type Series

Ordering Information - Single Phase:

Primary Voltage		480V	
Secondary Voltage		120 / 240V	
NEMA		3R	4X
kVA	0.5	XDT1A0A	XDT1A0AX
	0.75	XDT1A0B	XDT1A0BX
	1	XDT1A1	XDT1A1X
	1.5	XDT1A1A	XDT1A1AX
	2	XDT1A2	XDT1A2X
	3	XDT1A3	XDT1A3X
	5	XDT1A5	XDT1A5X
	7.5	XDT1A7	XDT1A7X
	10	XDT1A10	XDT1A10X
	15	XDT1A15	XDT1A15X
	25	XDT1A25	XDT1A25X
	37.5	XDT1A37	XDT1A37X

Ordering Information - Three Phase:

Primary Voltage		480V				600V			
Secondary Voltage		208Y / 120V		240V		208Y / 120V		480Y / 277V	
NEMA		3R	4X	3R	4X	3R	4X	3R	4X
kVA	3	XDT3B3	XDT3B3X	XDT3C3	XDT3C3X	XDT3D3	XDT3D3X	XDT3E3	XDT3E3X
	6	XDT3B6	XDT3B6X	XDT3C6	XDT3C6X	XDT3D6	XDT3D6X	XDT3E6	XDT3E6X
	9	XDT3B9	XDT3B9X	XDT3C9	XDT3C9X	XDT3D9	XDT3D9X	XDT3E9	XDT3E9X
	15	XDT3B15	XDT3B15X	XDT3C15	XDT3C15X	XDT3D15	XDT3D15X	XDT3E15	XDT3E15X
	30	XDT3B30	XDT3B30X	XDT3C30	XDT3C30X	XDT3D30	XDT3D30X	XDT3E30	XDT3E30X
	45	XDT3B45	XDT3B45X	XDT3C45	XDT3C45X	XDT3D45	XDT3D45X	XDT3E45	XDT3E45X
	75	XDT3B75	XDT3B75X	XDT3C75	XDT3C75X	XDT3D75	XDT3D75X	XDT3E75	XDT3E75X
	112.5	XDT3B112	XDT3B112X	XDT3C112	XDT3C112X	XDT3D112	XDT3D112X	XDT3E112	XDT3E112X
	150	XDT3B150	XDT3B150X	XDT3C150	XDT3C150X	XDT3D150	XDT3D150X	XDT3E150	XDT3E150X

4A XDT Hazardous Location Dry-Type Transformers

Cl. I, Div. 2, Groups A, B, C, D NEMA 3R, 4X

Resin Encapsulated Dry-Type Series

Technical Details - Single Phase:

NEMA 3R Painted Steel Enclosure

Single Phase - 480V Primary to 120 / 240V Secondary

kVA	Cat. #	Winding	Height (In.)	Width (In.)	Depth (In.)	Weight (Lbs.)	Frame	Taps
0.5	XDT1A0A	CU	6.5	4.9	4.7	21	57H	None
0.75	XDT1A0B	CU	8.4	6.0	5.5	33	58H	None
1	XDT1A1	CU	8.4	6.0	5.5	35	59H	None
1.5	XDT1A1A	CU	10.5	6.4	6.1	52	67H	None
2	XDT1A2	CU	10.5	6.4	6.1	51	68H	None
3	XDT1A3	AL	14.1	7.8	8.0	79	176H	None
5	XDT1A5	AL	16.0	10.4	9.9	140	177H	None
7.5	XDT1A7	AL	16.0	10.4	9.9	146	178H	None
10	XDT1A10	AL	19.0	13.4	10.5	240	179H	None
15	XDT1A15	AL	19.0	13.4	10.5	260	180H	None
25	XDT1A25	AL	28.5	22.5	14.7	409	300H	None

Technical Details - Three Phase:

NEMA 3R Painted Steel Enclosure

Three Phase - 480V Δ Primary to 208Y / 120V Secondary

kVA	Cat. #	Winding	Height (In.)	Width (In.)	Depth (In.)	Weight (Lbs.)	Frame	Taps
3	XDT3B3	CU	13.4	16.0	3.4	152	201H	2 at -5%
6	XDT3B6	CU	15.9	16.5	9.9	215	200H	2 at -5%
9	XDT3B9	CU	15.9	16.5	9.9	230	103H	2 at -5%
15	XDT3B15	CU	17.4	19.7	10.7	316	95H	2 at +2.5%; 2 at -2.5%
30	XDT3B30	CU	26.6	25.3	12.8	632	243H	2 at +2.5%; 4 at -2.5%
45	XDT3B45	CU	26.5	28.5	14.6	898	244H	2 at +2.5%; 4 at -2.5%
75	XDT3B75	CU	30.8	30.1	15.6	1470	245H	2 at +2.5%; 4 at -2.5%
112.5	XDT3B112	CU	Contact Customer Service					
150	XDT3B150	CU						

Additional Information and Configurations:

- Contact Customer Service for technical specifications (dimensions, weights, taps, etc.) on all other sizes.
- Special configurations are available on request. Please contact Customer Service for additional details.

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