

# D2D/EXD size F power panelboards

## Installation & maintenance information

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

### APPLICATION

EXD and D2D size F panelboards provide a centrally controlled switching system and short circuit protection for feeder or branch circuits to control lighting, heating, appliance, heat tracing, motor and similar circuits.

EXD panelboards are designed for use in Class I, Division 1 and 2, Groups B (with GB suffix), C, D hazardous (classified) areas as defined by the National Electrical Code® (NEC) as well as in damp, wet locations – indoors or outdoors.

D2D panelboards are designed for use in Class I, Division 2, Groups B, C, D; Class II, Groups E, F, G.

Panelboards should be installed, inspected, maintained and operated by qualified and competent personnel. Read entire instructions before starting installation of this product. Contact your Crouse-Hinds Sales Representative, Crouse-Hinds Customer Service or your Crouse-Hinds Distributor if you have any questions.

#### Enclosure only ratings

-25°C to 60°C	Groups B, C, D 10kAIC
	Groups C, D 65kAIC
cUL max. ambient +40°C	

### INSTALLATION

#### WARNING

To avoid personnel injury or damage to equipment, disconnect all power upstream from panel prior to opening enclosure. Failure to do so could result in personnel injury or damage to equipment.

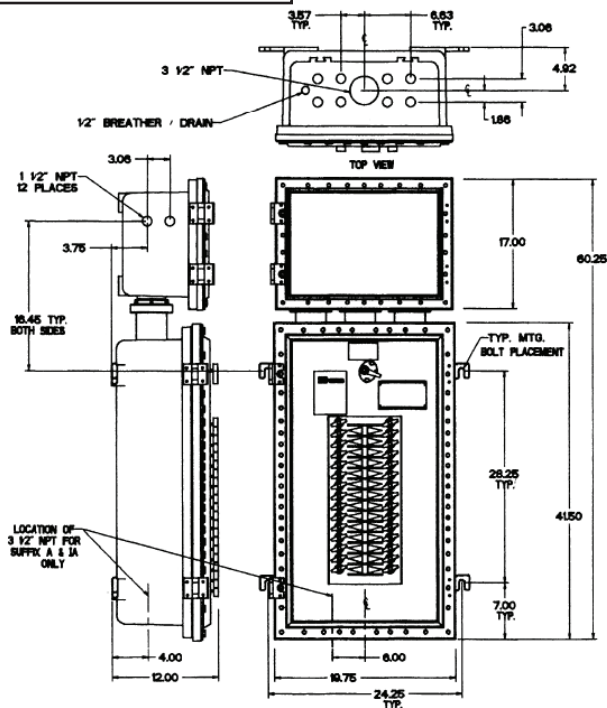


Figure 1 – D2DFA panel, mounting dimensions

1. Select a mounting location that will provide suitable strength and rigidity for supporting the panelboard and all contained wiring. Figure 1 shows the mounting dimensions. Approximate shipping weight of panelboard fully loaded with breakers is 590 lbs.

#### CAUTION

To prevent external fire or explosion of Group B atmospheres, do not connect to a supply circuit having a capability of delivering more than 10,000 RMS symmetrical amperes.

For Group C and D atmospheres, do not connect to a supply circuit having a capability of delivering more than 65,000 RMS symmetrical amperes at 240/480 VAC.

A mechanical lifting means is provided as standard.

#### WARNING

To avoid personal injury or damage to the panelboard assembly, the steel plate provided for lifting the enclosure during installation is designed to accept a maximum 2 ton hook.

2. Install detachable mounting feet while enclosure is on the floor or work bench (see Figure 2).
- Insert four (4) wedge shaped mounting feet into dovetail slots in enclosure body.
- Tap each foot to securely tighten into slot.

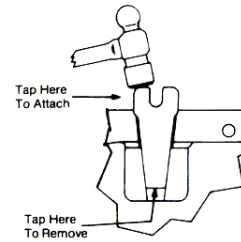


Figure 2 – Mounting feet

3. Position enclosure on surface with mounting feet on the lower mounting bolts. While continuing to support the enclosure in position, install the top two (2) bolts. Tighten all four (4) mounting bolts securely in place.
4. Remove the cover bolts of the small (junction) box and swing open on its hinges. NOTE: Do not damage or scratch the flange surface.

Do not open cover of the circuit breaker enclosure. It is **not necessary** or recommended to remove the cover during panelboard installation. If it becomes necessary, see 'Removing and Reinstalling Cover'. Standard units are factory sealed and do not require any disassembly for installation of panelboard.

For main feed conduit entries in circuit breaker panelboard compartment (alternate option), install approved sealing fittings as required by Section 501-5 and/or 502-5 of the National Electrical Code plus any other applicable codes. Hazardous location information specifying class and group listing is marked on the nameplate of the panelboard.

#### WARNING

To avoid the risk of explosion, external seals are required when used in Group B hazardous areas. Install seals immediately adjacent to conduit opening.

5. With panelboard securely fastened to the mounting surface, attach into conduit system. Tapped conduit openings are provided for main circuit and branch circuits as shown in Figure 1. To reduce the risk of hazardous atmospheres, conduit runs 2" size and larger must have a sealing fitting connected within 18" of the enclosure. Use explosionproof RE reducers for conduit smaller than tapped opening.

#### WARNING

To avoid the risk of explosion, conduit sealing fittings are required on all conduit entrances (within 18" of the enclosure) for enclosures when used in Class I, Group B hazardous areas. Use Crouse-Hinds EYS seals. For other sealing requirements, consult the National Electrical Code.

Sealing fittings must be installed in accordance with the NEC and properly poured. See instructions supplied with sealing fittings. NOTE: Select nipple lengths sufficient to permit sealing fittings and unions to clear the flange.

- Hazardous location information specifying Class and Group listing is marked on the nameplate of each panelboard.
- Do not add or enlarge conduit entries in cast enclosures.
- All unused conduit openings must be closed properly with an approved plug, drain or breather such as Crouse-Hinds series PLG plugs or ECD breather/drains.

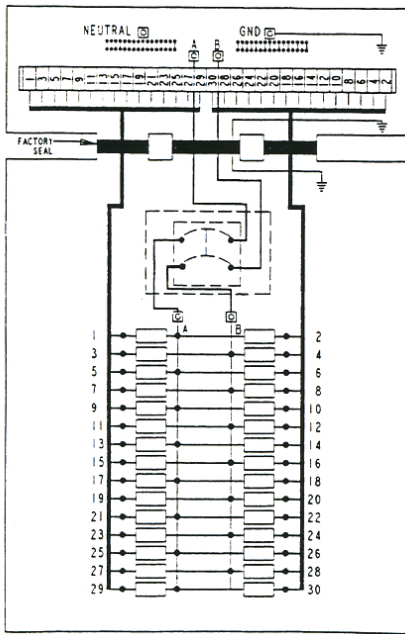
6. After enclosure is positioned and secured in its permanent location, pull wires into panelboard junction box, making sure that they are long enough to make the required connections. Make connections per Figure 3 of either one- or three-phase circuits.
7. Test wiring for correctness with continuity checks and for unwanted grounds with an insulation resistance tester.

#### WARNING

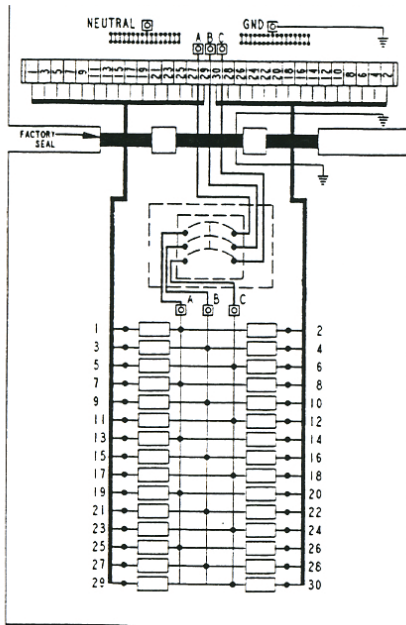
To avoid the risk of explosion, always clean both flat joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flat joint surfaces. Surfaces must seat fully against each other to provide a proper explosionproof joint.

8. Securely tighten all cover bolts supplied with the panelboard. Torque all cover bolts to 40-45 ft.-lbs.

EXD and D2D panelboards must be protected during hose down operations. These panelboards are watertight, but the breathers and drains are not.



Single-phase circuit wiring diagram



Three-phase circuit wiring diagram  
Figure 3

9. It is **not necessary** or recommended to remove the panelboard cover during enclosure installation. If it becomes necessary, see 'Removing and Reinstalling Panelboard Cover.'
10. Mark circuit card directory located on main enclosure cover with appropriate descriptions for proper branch circuit numbers. Place circuit card directory inside clear plastic jacket before placing back in its holder.

### REMOVING AND REINSTALLING PANELBOARD COVER

#### CAUTION

To avoid personal injury or damage to the panelboard assembly, panelboard cover weighs approximately 75 lbs.; handle appropriately for this weight.

#### CAUTION

To avoid personal injury or damage to the panelboard assembly, **DO NOT** use cover bolts or circuit breaker operators as a means to lift the enclosure. Excessive force on the fully retracted bolts or operators may damage the bolt/spring assembly.

- Loosen all cover bolts until each bolt is fully retracted into the cover by the stainless steel spring under the bolt head. Next, support the cover and remove the two (2) 5/16-18 hinge bolts that attach each hinge to the body. **DO NOT** remove the two (2) 5/16-18 bolts that attach hinge to cover. Using the hinge sections still attached to the cover, grasp the cover under opposite edges and lift from body.
- To replace cover, make sure cover and body ground joint surfaces are clean and not scratched. Orient cover so hinge side of cover will align with hinge on body. Lift cover to approximate position, and line up bolt holes of cover with body. Avoid sliding cover ground joint surface over ground joint surface of body. Cover body bolt holes must match up. Slide the cover over the guide pin protruding from the back flange. Hand start the corner bolts. Fully tighten all cover bolts (torque to 40-45 ft.-lbs.) and then reinstall the two (2) 5/16-18 hinge bolts (torque to 8 ft.-lbs.) for each hinge in the cover. Follow procedures in 'Opening Cover' section once hinges are reinstalled.

### OPENING COVER

EXD and D2D panelboards are furnished with captive triple lead bolts that utilize a spring to aid and indicate full retraction of the bolts into the cover when opening and closing. Make sure all cover bolts are fully retracted into the cover before attempting to open or close the cover.

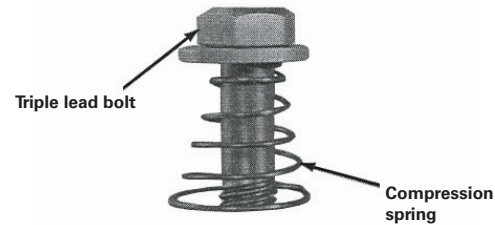


Figure 4 – Cover Bolt

When bolts are disengaged from the body flange threads, the bolts will withdraw and be held in this position by the spring and washer under the bolt heads (see Figure 4).

After all bolts are fully disengaged, firmly grasp the bottom and right side of the cover and carefully swing cover aside. To prevent damage to the ground joint surface, avoid striking cover, or devices in cover, on neighboring enclosures or structures.

#### WARNING

To avoid the risk of explosion or damage to equipment, hammers or prying tools must not be allowed to damage the flat joint surfaces. Do not handle cover roughly, or, if removed, do not place it on surfaces that might damage or scratch the flat ground joint surfaces.

### MAINTENANCE

#### WARNING

To avoid personnel injury or damage to equipment, disconnect all power upstream from panel prior to opening enclosure. Failure to do so could result in personnel injury or damage to equipment.

1. Frequent inspection should be made. A schedule for maintenance check should be determined by the environment and frequency of use. It is recommended that it should be at least once a year.
2. Perform visual, electrical and mechanical checks on all components on a regular basis.
  - Visually check for undue heating evidenced by discoloration of wires or other components, damaged or worn parts, or leakage evidenced by water or corrosion in the interior.
  - Electrically check to make sure that all connections are clean and tight.
  - Mechanically check that all parts are properly assembled, and operating mechanisms move freely.
  - When checking torque on main lugs, it may be necessary to move the insulating barrier to get access to the screws on the main lugs.
3. A Waterguard desiccant packet has been installed in this enclosure at the factory. The purpose of the desiccant is to absorb and remove water on contact or from the atmosphere, and protect the enclosed equipment from damage. The desiccant packet will expand 3 to 4 times its original size. Desiccant should be checked and replaced at regular equipment service intervals or every 3 to 6 months.

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof are not guaranteed. In accordance with Eaton's Crouse-Hinds Division's "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith.

For replacement desiccant packets, order Cat. #WG22 (protects 2 to 3 cubic feet of air space); or Cat. #WG33 (protects 4 to 5 cubic feet of air space).

Waterguard is non-toxic, emits no fumes and generates no heat during use. No gloves, masks or special clothing is required to handle this product.

4. Make sure all cover bolts are fully retracted into cover before closing cover on body. Close cover and start cover bolts threads by hand. Torque all cover bolts securely to 40-45 ft.-lbs.

#### WARNING

To avoid the risk of explosion, always clean both ground joint surfaces of body and cover lightly with soft cloth or compressed air before closing. Dirt or foreign material must not accumulate on flat joint surfaces. Surfaces must seat fully against each other to provide a proper explosionproof seal.

Replacement parts are available through your area Crouse-Hinds distributor. Replace main circuit breaker only with Westinghouse JDB type breakers of the proper rating. Similarly, 480V and 600V branch breakers should be replaced only with Westinghouse EHD and FDB breakers, respectively.

5. We recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA No. 70B.