Power Panelboards - EXDU and D2DU Series
Installation & Maintenance Information

IF 1380

APPLICATION
EXDU and D2DU Series 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.

EXDU Series panelboards are designed for use in Class I, Div. 1 and 2, Groups B, C, D hazardous (classified) areas as defined by the National Electrical Code® (NEC) as well as in damp, wet locations - indoors or outdoors.

D2DU Series panelboards are designed for use in Class I, Div. 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.

INSTALLATION

WARNING
To provide protection against fire or shock hazard, the electrical power must be OFF before and during installation and maintenance.

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 460 lbs.
A mechanical lifting means is provided as standard.

**CAUTION**
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 wedge shaped mounting feet into dovetail slots in enclosure body.
   - Tap each foot to securely tighten into slot.

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 bolts. Tighten all four mounting bolts securely in place.

4. Remove the cover bolts of the smaller (junction) box and swing open on its hinges.

**WARNING**
To avoid dangerous overheating and fire, do not use aluminum wiring. Use copper wiring only. Use 60°C or 75°C conductors.

**CAUTION**
To prevent external fire or explosion, external 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 type 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.
   - No conduit openings are to be added in the field.
   - All unused conduit openings must be plugged with explosion-proof plugs. Plugs must be a minimum of 1/8” thick, such as Crouse-Hinds type PLG, and engage a minimum of five full threads.

**EXDU02D0 - Panelboard Sealing Requirements**

<table>
<thead>
<tr>
<th>Terminal Housing</th>
<th>Breaker Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conduit ≥ 2&quot;</td>
</tr>
<tr>
<td>Cl. I Div. 1, Grp C&amp;D</td>
<td>Within 18&quot;</td>
</tr>
<tr>
<td>Cl. I Div. 1, Grp B,C&amp;D</td>
<td>Within 18&quot;</td>
</tr>
<tr>
<td>Cl. I Div. 2</td>
<td>Not required</td>
</tr>
</tbody>
</table>

**WARNING**
To maintain the integrity of the enclosure, do NOT damage or scratch the flange surface.

**CAUTION**
To prevent external fire or explosion, **DO NOT** connect to a supply circuit capable of delivering more than 10,000 RMS symmetrical amperes. **DO NOT** install equipment which will produce external surface temperatures exceeding the ignition temperature of the flammable or combustible materials which may surround this enclosure. **DO NOT** install arcing components or high temperature producing components such as relays, switches or transformers in the terminal enclosure. Circuit interrupting devices such as circuit breakers which may be installed in the enclosure may fail electrically or mechanically unless they have been investigated and found suitable for operation in the hazardous location involved.

9. Install the operating fork sliding roll pin into fork groove. Secure with lock washer and screw. Fork should be facing bottom of panel (see Figure 6).
10. Install operating handle with counter bore facing up and shorter end pointing towards the center of the breaker enclosure using the lock washer and screw provided.

**NOTE:** For 2 and 3 pole breaker actuators two long roll pins (provided) must be installed into the pre-drilled holes in the back of the breaker housing cover. This will prevent the actuators from rotating 360 degrees.

**ADDING PLUGS**
Remove breaker operator assembly and bearing and using a non-petroleum based thread lubricant, thread in plug until it is tight against face plate (see Figure 6). Install two roll pins where necessary to limit over travel of adjacent operator forks.

**CAUTION**
Clean dirt or foreign material from both flange surfaces of body and cover before closing.

Securely tighten all cover bolts. Use only bolts supplied with the panelboard. Start cover bolt threads by hand then torque all cover bolts to 40-45 ft. lbs.

**Panelboard Replacement Parts**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXDU-K1</td>
<td>Extra circuit breaker operator assemblies and circuit breaker sliders (qty. 3 each)</td>
</tr>
<tr>
<td>EXDU-K2</td>
<td>Replacement cover plugs for unused circuit breaker positions (qty. 5)</td>
</tr>
</tbody>
</table>

**FIGURE 6**
Fork Stop Assembly

**FIGURE 5**
Typical Branch Circuit Breaker Handle Assembly
6. After enclosure is positioned and secured in its permanent location, pull wires into panelboard junction box making sure they are long enough to make the required connections. Make connections per Figure 3 of either single or three phase circuits.

7. Test wiring for correctness with continuity checks and for unwanted grounds with an insulation resistance tester.

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**WARNING**
To maintain the integrity of the enclosure, clean dirt or foreign material from both flange surfaces of body and cover before closing. This will ensure a proper explosion-proof joint.

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**CAUTION**
Securely tighten all cover bolts supplied with the panelboard. Torque all cover bolts to 40-45 ft. lb.

EXDU and D2DU Series panelboards must be protected during hose down operations. These panelboards are watertight but the breakers and drains are not.

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**CAUTION**
It is not necessary nor 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.

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**OPENING COVER**
EXDU and D2DU Series 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.

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**MAINTENANCE**

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.
**BUS BAR CONNECTOR TORQUE**

<table>
<thead>
<tr>
<th>BOLT SIZE</th>
<th>TORQUE (lb. in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10</td>
<td>30</td>
</tr>
<tr>
<td>1/4</td>
<td>65</td>
</tr>
<tr>
<td>5/16</td>
<td>130</td>
</tr>
</tbody>
</table>

**ADDING OR REMOVING BREAKERS**

Breaker actuator kits are used to change the configuration of an existing panelboard. EXDU K1 provides breaker operators while EXDU K2 provides operator plugs. Changing present breaker pole combinations is solved by choosing the appropriate kit. Before adding or removing any breakers, see "OPENING COVER" section. If adding breakers, determine the quantity, trip rating and number of poles for each. Remove the circuit breaker slider bracket and hardware. Before removing the circuit breaker sliders, note their positioning. Remove the trim plate on the chassis and set aside. Add or remove circuit breakers as necessary. Terminate any necessary additional wires to the newly added circuit breakers by making sure they are long enough to make the required connections. Make connections per Figure 3 of either single or three phase circuits. Test wiring for correctness with continuity checks for unwanted grounds with an insulation resistance tester. With breakers installed in new panelboard configuration, determine the location and orientation of breaker operators to be added and circuit positions to be plugged, see Figure 7. Reinstall trim plate with necessary circuit breaker sliders positioned properly. Fasten slider bracket to trim plate making sure each slider has full travel. Install necessary breaker operators or plugs to the cover of the breaker housing, see "ADDING BREAKER OPERATORS" or "ADDING PLUGS." Close cover per instructions in "ADDING PLUG" section.

**ADDING BREAKER OPERATORS**

1. Remove plug from opening.
2. Apply a small amount of non-petroleum based lubricant, such as Crouse-Hinds STL or HTL to operating bearing threads.
3. Thread in operating bearing from the outside of the panel until the bearing bottoms out (see Figure 5).
4. Slide spring over square end of operating shaft until it seats against roll pin.
5. Thread shaft from the inside of enclosure thru operating bearing until O-ring groove is exposed.
6. Place the O-ring onto shaft groove with a touch of white grease.
7. After installation of O-ring, back off shaft one or two turns so that the O-ring is not exposed. The square section of the shaft should be just above the bearing.
8. The roll pin should be parallel to the bottom of the enclosure.

**CONNECTOR WIRE TORQUE**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>WIRE SIZE</th>
<th>TORQUE (lb. in.)</th>
</tr>
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<tbody>
<tr>
<td>TERMINAL STRIP</td>
<td>22-8 AWG</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>10-1/2 AWG</td>
<td>25</td>
</tr>
<tr>
<td>GROUND-NEUTRAL</td>
<td>8-10 AWG</td>
<td>35</td>
</tr>
<tr>
<td>STRIPS</td>
<td>6-4 AWG</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>2-1/2 AWG</td>
<td>50</td>
</tr>
<tr>
<td>NEUTRAL LUG</td>
<td>6 AWG - 250 MCM</td>
<td>200</td>
</tr>
<tr>
<td>ENCLOSURE GROUND</td>
<td>14-20 AWG</td>
<td>120</td>
</tr>
<tr>
<td>LLUGS</td>
<td>8 AWG - 500 MCM</td>
<td>375</td>
</tr>
<tr>
<td>MAIN TERMINAL</td>
<td>AS MARKED</td>
<td>ON DEVICE</td>
</tr>
<tr>
<td>BLOCK</td>
<td>AS MARKED</td>
<td>ON DEVICE</td>
</tr>
<tr>
<td>MAIN AND BRANCH</td>
<td>AS MARKED</td>
<td>ON DEVICE</td>
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<td>CIRCUIT BREAKERS</td>
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**CAUTION**
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2. Install detachable mounting feet while enclosure is on the
to prevent external fire or explosion, external conduit
3. Position enclosure on surface with mounting feet on the
4. Remove the cover bolts of the smaller (junction) box and
5. With panelboard securely fastened to the mounting surface,

conduit runs 2 inch size and larger must have a sealing
To avoid dangerous overheating and fire, do not use aluminum
To prevent external fire or explosion, external conduit
Sealing fittings must be installed in accordance with the
Hazardous location information specifying Class and
No conduit openings are to be added in the field.
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**WARNING**
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NOTE: Do not open cover of the circuit breaker enclosure. It is
to prevent external fire or explosion, DO NOT connect
to a supply circuit capable of delivering more than

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Secure with lock washer and screw. Fork should be facing
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**CAUTION**
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**ADDING PLUGS**
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**Panelboard Replacement Parts**

**EXDU-K1**
Extra circuit breaker operator assemblies

**EXDU-K2**
Replacement cover plugs for unused

Fork Stop Assembly
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