

Typical AEP Panelboard

400/600/800A

Installation

Consult instructions NEMA PB-1 located in the circuit directory on the front door before installing this panelboard. If necessary, order replacement manual and PB-1.1 from supplier.

Wiring Guidelines (Cu or Al)

- Use 60°C or 75°C ampacity sized wire on line and neutral and equipment ground terminals.
- Standard wire sizes listed in this publication may be changed by using alternate terminal kits.
- Refer to circuit breakers for allowable wire temperature rating, wire size and tightening torque.

Short Circuit Current Rating

The panelboard's maximum short circuit interrupting rating in rms symmetrical amperes, is equal to the lowest interrupting rating of any device installed, except as noted in the series rating listed in DEH-40007, with integral or remote main circuit breaker or fusible switch installed upstream of the panelboard. Devices to be installed or replacement units shall be from the same manufacturer, of the same type, and have equal or greater interrupting capacity.

Maximum continuous loads on main or branch circuits shall not exceed 80% of the ratings of the listed circuit breakers. SE/FB/ED branch breaker straps suitable for 300A maximum. TEY branch breaker straps suitable for 180A maximum.

Tripped Breaker

If the breaker trips, handle will be in intermediate position.

Instructions To Restore Power

1. Move handle to OFF position.
2. Then move handle to ON position.

Seismic Rating

Meets or Exceeds the Requirements According to

- **IEEE-693-2005**
High Level with 1.8 Amplification Factor
- **IBC-2006**
Sds = 1.3g, Ss = 200%, Ip = 1.5, for z/h > 0
Sds = 2.0g, Ss = 300%, Ip = 1.5, for z/h = 0
In accordance with ICC-ES-AC156

Polybag Contents

A polybag of goods supplied with every panelboard interior contains:

- Arc flash label
- DEH-40007 Series Ratings, Wiring Diagrams & Circuit Directory
- Series rating sticker
- Front installation instructions
- ANSI PB1 documentation
- Circuit numbering stickers (1-84)
- Front and shield mounting screws



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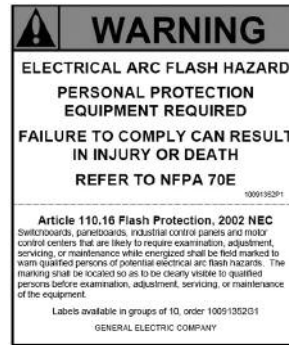
Torque

Tightening Torque

Applies to line, neutral and equipment ground terminal

| Slotted Screw | | |
|---------------|--------|-----|
| AWG Wire | Lbs-In | |
| | Min | Max |
| 14-10 | 32 | 35 |
| 8 | 36 | 40 |
| 6-4 | 41 | 45 |
| 3-2/0 | 45 | 50 |

| Internal Hex | | |
|--------------|--------|-----|
| Hex Size | Lbs-In | |
| | Min | Max |
| 3/16 | 108 | 120 |
| 1/4 | 180 | 200 |
| 5/16 | 240 | 275 |
| 3/8 | 330 | 375 |
| 1/2 | 450 | 500 |



Arc fault label included with all interiors to be applied by electrical contractor.

Torque Values for Hardware

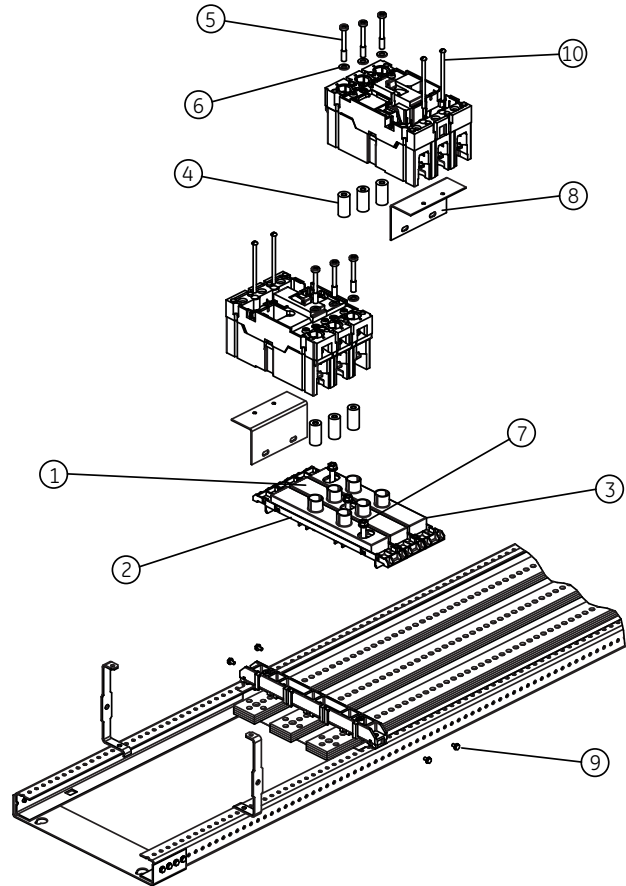
| Screw Size | Torque (In-Lbs) |
|--------------------------|-----------------|
| #4 Steel | 16 |
| #10 Plastic | 16 |
| #8 Cu/Al/Steel | 24 |
| #10-32 Cu/Al/Steel | 32 |
| 1/4-20 Al/<.150 Thick Cu | 44 |
| 1/4-20 .150 Thick Cu | 60 |
| 5/16-18 Cu/Al/Steel | 110 |
| 3/8-16 Cu/Al/Steel | 220 |
| 1/2-13 Cu/Al/Steel | 220 |

Breaker Mounting Kits

| Application | Type | Cat. No. |
|----------------------------------|--------------------------|-----------|
| Breaker-Defined Spaces (1) | 3-poles SG | ASPPSG3P |
| | 3-poles SF | ASPPSF3P |
| | 3-poles TED/THED/FB/SE | ASPPTED3P |
| | 2-poles TFJ in DC panels | ASPTFJ2P |
| | 2-poles TJJ in DC panels | ASPTJJ2P |
| Unspecified and Blank Spaces (2) | SG Breaker | ASPP6SG3S |
| | SF Breaker | ASPP6SF3S |
| | SE/ED/FB (double branch) | ASPP6SE6D |
| | EY Breakers (12 poles) | ASPP6EY6D |

(1) Includes items numbered 4, 5, 6 and 10 in exploded view.

(2) Includes all numbered items in exploded view except 9. Good for each (quantity 1) 6" unspecified space.



Crimp Tools

| Wire | Crimp Tool |
|--|--------------------|
| Up to #6-1000 MCM Cu & #5-750 Kcmil Al | Burndy Tool Y644HS |

Neutral

| Wire Range | Cat. No. |
|----------------|----------|
| (8) #2-600MCM | ANKN120 |
| (10) #6-250MCM | |
| (9) #140-2/0 | |
| (10) #8-#4 | |

Interrupting Ratings - Molded Case Circuit Breakers

| Molded Case Circuit Breakers | | | | | | Federal Spec | UL Listed Interrupting Ratings in kA | | | | | | |
|------------------------------|----------|-------------------|------|----------|----------|--------------------|--------------------------------------|----------|-----|-----|----------|-----|-----|
| Construction | Frame | Trip Range (Amps) | Pole | AC | DC | C/B Class W-C-375B | RMS Symmetrical AC Volts | | | | | | |
| | | | | | | | 120 | 120/ 240 | 240 | 277 | 480Y/277 | 480 | 600 |
| Standard Frames | TEY | 15-100 | 1 | 480Y/277 | 250 | 13a | | | 65 | 14 | | | |
| | | 15-100 | 2,3 | 480Y/277 | 250 | 13a | | | 65 | | 14 | | |
| | TJD | 250-400 | 2,3 | 240 | 250 (1) | 14b | | | 22 | | | | |
| | | 15-100 | 1 | 480Y/277 | 250 | 13a | | | 65 | 18 | | | |
| | TEYF | 15-100 | 2,3 | 480Y/277 | 250 | 13a | | | 65 | | 18 | | |
| | | 15-100 | 2,3 | 480Y/277 | 250 | 13a | | | 65 | | 18 | | |
| Spectra RMS | SEH (2) | 15-150 | 2 | 480 | | 13b, 15b | | | 65 | | | 25 | |
| | | | 3 | 600 | | 22a | | | 65 | | | 25 | 18 |
| | SEL | 15-150 | 2 | 480 | | 13b, 15b | | | 100 | | | 65 | |
| | | | 3 | 600 | | 21a, 22a, 23a | | | 100 | | | 65 | 25 |
| | SEP | 15-150 | 2 | 480 | | 16a | | | 200 | | | 100 | |
| | | | 3 | 600 | | 16a, 23a | | | 200 | | | 100 | 25 |
| | SFH | 70-250 | 2 | 480 | | 13b | | | 65 | | | 35 | |
| | | | 3 | 600 | | 20a, 22a | | | 65 | | | 35 | 22 |
| | SFL | 70-250 | 2 | 480 | | 13b | | | 100 | | | 65 | |
| | | | 3 | 600 | | 21a, 23a | | | 100 | | | 65 | 25 |
| | SFP | 70-250 | 2 | 480 | | 16a | | | 200 | | | 65 | |
| | | | 3 | 600 | | 16a, 23a | | | 200 | | | 65 | 25 |
| | SGH4 (2) | 125-400 | 2,3 | 600 | | 21a, 23a | | | 65 | | | 35 | 25 |
| | SGH6 (2) | 250-600 | 2,3 | 600 | | 23a | | | 65 | | | 35 | 25 |
| | SGL4 | 125-400 | 2,3 | 600 | | 23a | | | 100 | | | 65 | 65 |
| | SGP4 | 125-400 | 2,3 | 600 | | 23a | | | 200 | | | 100 | 65 |
| | SGL6 | 250-600 | 2,3 | 600 | | 24a | | | 100 | | | 65 | 65 |
| | SGP6 | 250-600 | 2,3 | 600 | | 25a | | | 200 | | | 100 | 65 |
| SKH8 | 300-800 | 2,3 | 600 | | 21a, 23a | | | 65 | | | 50 | 25 | |
| SKL8 | 300-800 | 2,3 | 600 | | 24a | | | 100 | | | 65 | 42 | |
| SKP8 | 300-800 | 2,3 | 600 | | 25a | | | 200 | | | 100 | 65 | |

(1) 3 Poles are not DC rated

(2) Not current limiting breaker type

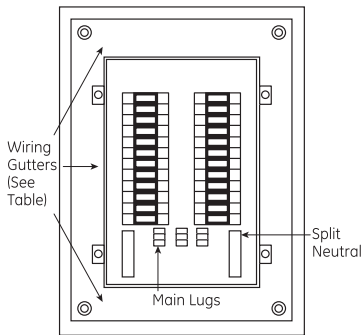
Circuit Breaker Terminals (Cu-Al)

| Frame | | Poles | No. per Pole | Cat. No. | Wire Cu-Al (Unless otherwise specified) | |
|----------|--------------------------------------|-------|--------------|---------------------------|---|--|
| Standard | Current Limiting / High Interrupting | | | | Per Lug | Range |
| TEY/TEYF | - | 1,2,3 | 1 | Fixed to Breaker Terminal | 1 | (15-20A) #14-#12 Cu or #12-1 Al, (30-60A) #10-#6 Cu or #8-#4 Al, (70-100A) #4-#1 Cu or #2-1/0 Al |
| TED4 | - | 2,3 | 1 | Fixed to Breaker Terminal | 1 | (70-110A) #6-2/0 Cu, #4-2/0 Al |
| - | SEH, SEL, SEP | 2,3 | 1 | TCAL18 | 1 | #12-3/0 Al; #12-3/0 Cu |
| SFHA | SFLA, SFPA | 2,3 | 1 | TCAL129 | 1 | #8-350kcmil |
| TFJ | - | 2,3 | 1 | TCAL24,26 | 1 | #4-300MCM |
| TJJ | - | 2,3 | 1 | TCAL43 | 1 | #6-600MCM or 2(2/0-250MCM) |
| SGHA | SGL, SGP | 2 | 1 | TCLK265 | - | 2(2/0-400kcmil, Cu) or 2(2/0-500kcmil, Al) or #6-600kcmil |
| | | 3 | 1 | TCLK365 | - | 2(2/0-400kcmil, Cu) or 2(2/0-500kcmil, Al) or #6-600kcmil |
| SKHA8 | SKLA8, SKPA8 | 2,3 | 1 | TCAL41 | 1 | #4-600kcmil or 2(1/0-250kcmil) |
| | | | | TCAL61 | 2 | 2/0-500kcmil |
| | | | | TCAL81 | 3 | 3/0-500kcmil |

Wiring Space

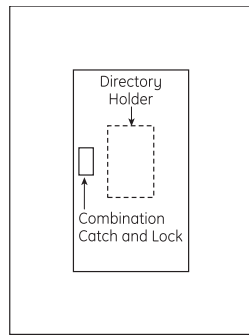
Typical Panelboard

Front view with trim removed

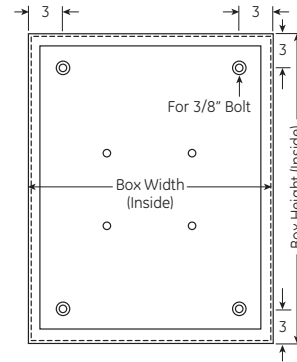


Typical Front w/Concealed Hinges and Trim Adjusting Screws

Surface mounting – add 1/4" to inside box dimensions
Flush mounting – add 1 1/2" to inside box dimensions



Typical Box



Minimum Wiring Space, From End of Lug to Box Wall, in Inches

| Main rating in amps | Main Lugs Only, to End Wall | | Frame Type | Mounting | Main Circuit Breaker |
|---------------------|-----------------------------|-------------|------------|----------|-----------------------|
| | Phase Lug | Neutral Lug | | | Phase Lug To End Wall |
| 600A (1) | 15 | 11 (1) | SG | Vertical | 16 |
| 800A (2) | 15 | 11 (1) | SK | Vertical | 18 |

(1) Box width is 30" and 7.81" deep

Wiring Space – Branch Circuit Breakers

| Branch Circuit Devices | Frame | No. of Poles | Minimum Wiring Spaces To Side Wall (30" Wide Box) |
|----------------------------------|------------|--------------|---|
| Double Branched Bolt-on Devices | TEY/TEYF | 1,2,3 | 9.75" |
| Horizontal Double Branch Mounted | TED4 | 2,3 | 8.25" |
| Horizontal Double Branch Mounted | SEHA, SELA | 2,3 | 8.25" |
| Horizontal Single Branch Mounted | SFHA, SFLA | 2,3 | 7.5" |
| Horizontal Single Branch Mounted | SGHA, SGLA | 2,3 | 8.5" |

Enclosures

| Panel Size | Box | | Front |
|------------|--------------|-----------------|--------------|
| | Cat. No. (1) | Size Inches (2) | Cat. No. (3) |
| 0-25.5 | AB25BDW | 25.5 | AF25F,S |
| 28.5-31.5 | AB31BDW | 31.5 | AF31F,S |
| 34.5-37.5 | AB37BDW | 37.5 | AF37F,S |
| 40.5-43.5 | AB43BDW | 43.5 | AF43F,S |
| 46.5-49.5 | AB49BDW | 49.5 | AF49F,S |
| 52.5-55.5 | AB55BDW | 55.5 | AF55F,S |
| 58.5-64.5 | AB64BDW | 64.5 | AF64F,S |
| 67.5-76.5 | AB76BDW | 76.5 | AF76F,S |
| 79.5-82.5 | AB82BDW | 82.5 | AF82F,S |
| 85.5-88.5 | AB88BDW | 88.5 | AF88F,S |

(1) "B" suffix provides blank end walls. Order "K" suffix for endwalls with knockouts.

(2) Standard boxes are 30" wide by 7.81" deep.

(3) Flush fronts are 1 1/2" larger than box. Surface fronts are 1/4" larger.

Front Options

| Description | Cat. No. Suffix (1) |
|--------------------------|---------------------|
| Screw cover | C |
| Front hinged to box | D |
| Yale 5116 w/Rosette Lock | Y |
| Corbin 15767 Lock | L |
| GE 75 Key Lock | E |
| Corbin 60 Key Lock | J |
| Door within a door (2) | P |
| Stainless steel (3) | S |
| 30" wide | W |
| Nameplate | N |
| Screw on nameplate | U |
| Metal directory | M |

- (1) Add to base front catalog number.
- (2) Consists of two lockable doors—one over panel interior and one over box wiring gutters. Yale locks not available.
- (3) Flush only. Available with C and N options.

Box Options

| Description | Cat. No. Suffix (1) |
|-------------------------------|---------------------|
| Painted Box | P |
| 30" wide (2) | W |
| NEMA 3R/12/4S/4X | 3 or 4 |
| NEMA 4X (316 Stainless Steel) | 4S |

(1) Add to base box product number.

(2) Includes field installable gutter barrier.

Permanent Circuit Number Kits

| Description | Cat. No. |
|-------------|----------|
| 1-48 | APN48 |
| 43-84 | APN84 |
| 85-126 | APN126 |

Stainless Steel Enclosures

| Dimensions (inches) | | | Cat No. | |
|---------------------|----|---|-------------|-------------|
| H | W | D | UL Standard | CSA Labeled |
| 25.5 | 30 | 8 | AB254DWS | AB254DWAS |
| 31.5 | 30 | 8 | AB314DWS | AB314DWAS |
| 37.5 | 30 | 8 | AB374DWS | AB374DWAS |
| 43.5 | 30 | 8 | AB434DWS | AB434DWAS |
| 49.5 | 30 | 8 | AB494DWS | AB494DWAS |
| 55.5 | 30 | 8 | AB554DWS | AB554DWAS |
| 64.5 | 30 | 8 | AB644DWS | AB644DWAS |
| 76.5 | 30 | 8 | AB764DWS | AB764DWAS |

Accessories

Field Installed Kits/Replacement Parts

Equipment Grounds

Bonded

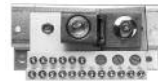


AEBG

Isolated



AEIG



AEBGC



AEIGC



ASPGIBC - Isolated/Bonded

| Item | Description | Wire Range | Cat. No. |
|---------------------------|--------------------|---|----------|
| Metal Equipment Ground | Bonded | #14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes) | TGL2 |
| | Extruded Bonded | #14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes) | EGS12 |
| Aluminum Equipment Ground | Extruded Bonded | (1) #6-350MCM | AEBG |
| | Extruded Isolated | (2) #6-250MCM | AEIG |
| Copper Equipment Ground | Main Lug | #14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes) | TGL2 |
| | Bonded | #14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes) | TGC2 |
| Copper Equipment Ground | Extruded Bonded | (1) #4-350MCM | AEBGC |
| | Extruded Isolated | (1) #6-250MCM | AEIGC |
| | Insulated Isolated | 2/0 max. | ASPGIBC |

Installation & Maintenance Kit

Order catalog number PROCARE. Kit includes:

- (5) filler plate hardware kits
- (9) bus stud nuts
- (5) MLA1 filler plates
- (2) 225A phase barriers
- (2) feed-thru barriers
- (1) 400/600A phase barrier
- (50) directory cards/rating books
- (50) circuit number strips (1-48)
- (50) circuit number strips (43-84)
- (5) standard locks & keys
- (50) deadfront screws
- (10) AQ/AE front hardware kits
- (10) AD front hardware kits
- (50) service disconnect labels
- (50) main labels

Parts

| Description | Cat. No. |
|---|--------------|
| Directory Card | 139C5612P3 |
| Replacement Lock with Std. Key | 569B737P1 |
| Replacement Lock with GE75 Key | 569B737P2 |
| Additional Keys for Above Lock | 569B737P5 |
| Circuit Numbering Strips 1-48 | 569B806G1 |
| Circuit Numbering Strips 49-84 | 569B806G2 |
| Circuit Numbering Strips 85-126 | 569B806G3 |
| Adhesive Backed Lamicaid Nameplate 3/4" x 3" | 315A7190P1 |
| Metal Directory Card Holder | 139C5491G1 |
| Directory Card Holder | 139C5491P4 |
| Delta Hi-leg Conversion Kit, to Add B-Phase Plug on AL Panels | APHBL |
| Bolt on AE/AQ Panels | APHBQ |
| NEMA 3R/12 Tamper Proof Tork Screw Kit | NEMATRIX |
| 2P to 3P TQD Conv. Kit | ASP2PTQD3P |
| 2P to 3P SF Conv. Kit for horizontal subfeed | ASP2PTFJ3P |
| AD 25 to 65 kAIC Barrier kit | ASP25AD65KA1 |
| Service Entrance Kit | ASPSERENT |
| 2 wire Relay Kit | ASP2WRelay |
| Yale Lock Kit | ASPYALE47 |
| Corbin Lock Kit | ASPCORBNTU1 |
| 2-3 pole TQD Mechanical Interlock | TQDFM1 |
| AQ/AL/AE Rail Bracket | ASPAQLEBKT |
| Front Flush Adjust Kit | ASPFLUSHADJ |
| AE Front Mounting Kit | 139C5720G3 |
| AQ/AL Front Mounting Kit | 139C5720G6 |
| AD Front Mounting Kit | 139C5728G9 |
| Front Hinge to Box Mounting Kit | 139C5700G6 |
| Front Extension Mounting Kit | 139C5700G11 |

Box Extensions

Bolts to box with or without endwall in place. Extensions can be combined to obtain lengths greater than 18 and 24 inches.

| Box Width and Depth | Box Mounting | Box Extension Length (Inches) | Cat. No. |
|---------------------|--------------|-------------------------------|----------|
| 30 x 7.81 | Flush | 18 | ABX3718F |
| | | 24 | ABX3724F |
| | Surface | 18 | ABX3718S |
| | | 24 | ABX3724S |

Filler Plates

| Breaker Type | Cat. No. |
|--------------------------------|----------|
| THQB/THHQB/THQL/THHQL/TEV/TEYF | TQLFP1 |
| TQD/THQD/TED4/SE/FB | TEDFP1 |

Specifications

A-Series Panelboards and branch breakers meet or exceed the following standards and specifications:

- UL 50 Cabinets and Boxes
- UL 67 Panelboards
- UL 489 Circuit Breakers
- NEMA AB-1 Circuit Breakers
- NEMA PB-1 and PB-1.1 Panelboards
- US Federal Spec W-P.115B Panelboards
- US Federal Spec W-C375b Gen Circuit Breakers

Boxes

- Galvanized steel
- Blank end walls are standard
- Boxes furnished with provisions for ground bus as standard

Fronts

- Finished in ANSI-61 grey polyester powder coat paint.
- Equipped with corrosion-resistant Valox combination catch and lock door latch (doors over 48" high provided with 2 latches)
- Equipped with concealed hinges and trim adjusting screws
- Directory holder permanently mounted to door

Panels

- Dead front construction
- Interiors are factory assembled on rigid steel frames
- Metal gages in accordance with UL and NEMA standards
- Solderless, anti-turn main lugs suitable for copper or aluminium wires are front removable and branch straps are silver-plated copper fully rated at 100 amperes
- Main bus is aluminum with copper branch connections unless otherwise specified
- Main disconnect device is identified when supplied, and numbers are provided for branch circuits
- Interior base assemblies are Noryl and provide breaker mounting and busbar insulation

Publications

| | |
|-----------|--|
| E-DET-465 | Certification of Seismic Compliance |
| DE-48A | Typical AEP Panelboard Technical Information |
| DEH 40007 | Lighting Panels Rating Labels, Wiring Diagrams & Circuit Directory |
| DEH-40155 | TEY/TEYF Three Phase Circuit Breaker Kits |
| DEH-40152 | TQD Three Phase Circuit Breaker Kits |
| DEH-40153 | SE/TED/FB Three Phase Circuit Breaker Kits |
| DEH-40154 | THQB Three Phase Circuit Breaker Kits |
| DEH-40151 | SF Three Phase Circuit Breaker Kits |

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