Typical AD Panelboard

Installation
Consult instructions NEMA PB-1.1 located in the circuit directory on the front door before installing this panelboard. If necessary, order replacement manual 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.
- Neutral rated for 200% panelboard phase current option.
  - Use copper wire only at neutral main lugs
    - 125A (1) neutral cables 250 mcm maximum
    - 225A (2) neutral cables 250 mcm maximum
    - 400A (2) neutral cables 600 mcm maximum
    - 600A (4) neutral cables 350 mcm maximum

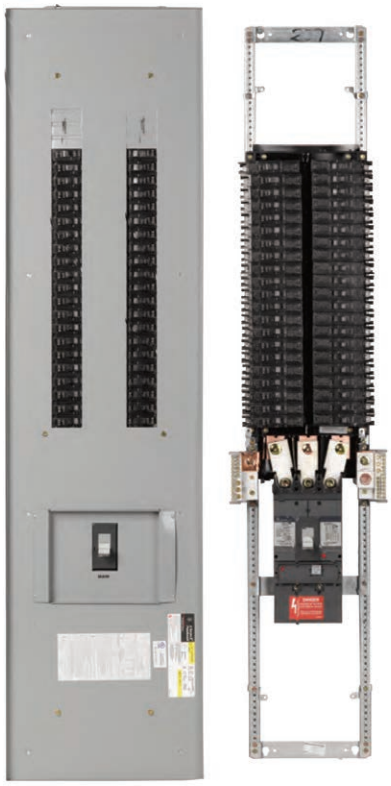
Suitable for nonlinear loads, 200% rated neutral, additional "Y" lugs provided for 200% neutral.

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. Branch breaker straps suitable for 200A 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 Amplication 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

Torque

Tightening Torque

Applies to line, neutral and equipment ground terminal

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

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

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

Lug Kits

Lug Kits for A-Series II Panelboards

Rating	Pressure Lug Kit		Crimp Lug Kit		Pressure Lug Kit	
	Cat. No.	Wire Range Al/Cu	Cat. No.	Wire Range Al/Cu	Cat. No.	Wire Range Cu Only
125A	MLA1	6-350	MLT1	4-300	MLR1	4-350
225A	MLA2	1/0-250	MLT2	2/0 - 500	MLR2	1/0-600
400A	Standard - MLA41	4-600	MLT41	500-750 (Cu Only)	MLR41	1/0-600
	Oversize – MLA62	3/0 - 800 (Main) & 4-600 (Neutral)	-	-	-	-
600A	Standard -MLA61	4-500	-	-	MLR61	1/0-600

Crimp Tools

Wire	Crimp Tool
All Al & Up to 500 MCM Cu	Hubbell Anderson VC6
500-750 MCM Cu	Hubbell Anderson VC7
Up to #6-1000 MCM Cu & #5-750 kcmil Al	Burndy Tool Y644HS

Neutral Lug Z

Holes	Wire Size – Cu / Al
Large	2 / 0 - 14
Small	No. 4 – 14

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

Interrupting Ratings - Molded Case Circuit Breakers

Molded Case Circuit Breakers						Federal Spec	UL Listed Interrupting Ratings in kA					
							RMS Symmetrical AC Volts					
Construction	Frame	Trip Range (Amps)	Pole	AC	DC	C/B Class W-C-375B	240	277	347	480Y/277	480	600
E150	TED	15-60	1	277				14		10		
		70-100	1	277				14		10		
	TED4	15-60	2,3	480			18			18		
		70-110	2,3	480			18			18		
		125-150	3	480			18			18		
	TED6	15-60	2,3	600			18			18		14
		70-110	3	600			18			18		14
		125-150	3	600			18			18		14
	THED	15-30	1	277				65				
	THED4	15-60	2	480			65			25		
		70-110	2	480			65			25		
		125-150	3	480			42			25		
	THED6	15-60	3	600			42			25		18
		70-110	3	600			42			25		18
		125-150	3	600			42			25		18
Record Plus	FBV	15-100	1	347			35	35	22			
			2,3	600Y/347			65				35	22
	FBN	15-100	1	347			65	65	25			
			2,3	600Y/347			150				65	25
	FBH	15-100	1	347			100	100	35			
			2,3	600Y/347			200				100	35
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

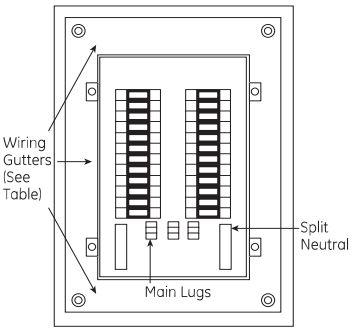
[1]3 Poles are not DC rated
[2]Not current limiting breaker type

Circuit Breaker Terminals (Cu-Al)

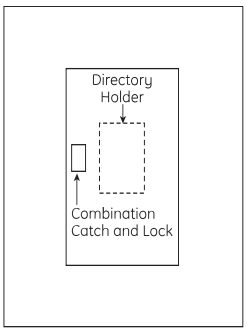
Frame		Poles	No. per Pole	Cat. No.	Wire Cu-Al (Unless otherwise specified)	
Standard	Current Limiting / High Interrupting				Per Lug	Range
TED, THED		1	1	TCAL12	1	(30-60A) #14-3 Cu or #12-1 Al
TED4		2,3	1	TCAL12A	1	(70-90A) #6-2/0 Cu or #4-2/0 Al
TED6, THED		2,3	1	TCAL15	1	(100-150A) #3-3/0
FBV, FBN, FBH, FBL		1,2,3	1	FCAL12	1	(15-20A)#14-#12 Cu or #10-312 Al
		1,2,3	1	FCAL13	1	(35-60A)#10-#6 Cu or #8-#4 Al
		1,2,3	1	FCAL14	1	(70-100A)#4-#1 Cu or #2-1/0 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
SGHA	SGL, SGP	2	1	TCLK265[1]	-	2 (2/0-400kcmil, Cu) or 2 (2/0-500kcmil, Al) or #6-600kcmil
		3	1	TCLK365[1]	-	2 (2/0-400kcmil, Cu) or 2 (2/0-500kcmil, Al) or #6-600kcmil
-	FGN4, FGH4	2,3	1	FCALK318H	-	Top Hole #8-400kcmil Cu or #6-500kcmil Al. Bottom hole #2/0-600kcmil Cu & Al
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

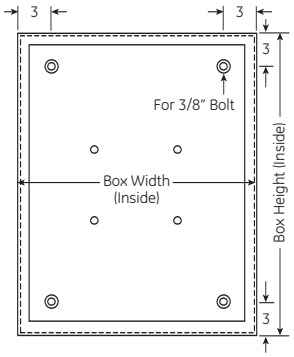
Typical Panelboard
Front view with trim removed



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		Neutral Lug
					To Side Wall (20" Wide box)	To End Wall	
125A MLO, 100A Main Breaker	6	6	TEY, SE	Horizontal	5	-	6
225A	12	12	TFJ, SF	Vertical	-	6	12
400A	15	11[3]	SF, SG, FG	Vertical	-	15	11[3]
600A	15	11[3]	SG	Vertical	-	16	-
800A[4]	15	11[3]	SK	Vertical	-	18	-

[3]To side wall
[4]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 (20" Wide Box)
Double Branched Bolt-on Devices	FB, TED, THED	1,2,3	3.7"
	SE	2,3	3.7"

Enclosures

Panel Size	Box		Front Cat. No.[7]
	Cat. No.[5]	Size Inches[6]	
0-25.5	AB25B	25.5	AF25F,S
28.5-31.5	AB31B	31.5	AF31F,S
34.5-37.5	AB37B	37.5	AF37F,S
40.5-43.5	AB43B	43.5	AF43F,S
46.5-49.5	AB49B	49.5	AF49F,S
52.5-55.5	AB55B	55.5	AF55F,S
57.5-64.5	AB64B	64.5	AF64F,S
67.5-76.5	AB76B	76.5	AF76F,S

[5]"B" suffix provides blank end walls. Order "K" suffix for endwalls with knockouts.
[6]Standard boxes are 20" wide by 5.81" deep.
[7]Flush fronts are 1 1/2" larger than box. Surface fronts are 1/4" larger.

Box Options

Description	Cat. No. Suffix[11]
Painted Box	P
30" wide[12]	W
NEMA 3R/12/4S/4X	3 or 4
NEMA 3RX Door-in-door	3M
NEMA 4X (316 Stainless Steel)	4S

[11]Add to base box product number.
[12]Includes field installable gutter barrier.

Permanent Circuit Number Kits

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

Front Options

Description	Cat. No. Suffix[8]
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[9]	P
Stainless steel[10]	S
30" wide	W
Nameplate	N
Screw on nameplate	U
Metal directory	M

[8]Add to base front catalog number.

[9]Consists of two lockable doors—one over panel interior and one over box wiring gutters. Yale locks not available.

[10]Flush only. Available with C and N options.

Stainless Steel Enclosures

Dimensions (inches)			Cat No.	
H	W	D	UL Standard	CSA Labeled
25.5	20	6	AB254S	AB254AS
25.5	30	8	AB254DWS	AB254DWAS
31.5	20	6	AB314S	AB314AS
31.5	30	8	AB314DWS	AB314DWAS
37.5	20	6	AB374S	AB374AS
37.5	30	8	AB374DWS	AB374DWAS
43.5	20	6	AB434S	AB434AS
43.5	30	8	AB434DWS	AB434DWAS
49.5	20	6	AB494S	AB494AS
49.5	30	8	AB494DWS	AB494DWAS
55.5	20	6	AB554S	AB554AS
55.5	30	8	AB554DWS	AB554DWAS
64.5	20	6	AB644S	AB644AS
64.5	30	8	AB644DWS	AB644DWAS
76.5	20	6	AB764S	AB764AS
76.5	30	8	AB764DWS	AB764DWAS

Accessories

Field Installed Kits/Replacement Parts

Filler Plates

Breaker Type	Cat. No.
THQB/THHQB/THQL THHQL/TEY	TQLFP1
TQD/THQD/TED4/SE/FB	TEDFP1

Breaker Mounting Hardware Kits

For mounting breaker in existing space

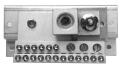
Breaker Type	Cat. No.
TED/THED4/SE	ASPTED3P
TQD/THQD	ASPTQD3P
FB	ASPFB12P

Endwall Kits

Field installed.
1 each, for standard 20”w x 5.81”d boxes.

Type	Cat. No.
Blank	ABEW2
Knockout	ABEW2

Equipment Grounds


AEBG

AEIG

ASPGIBC

AEBGC

AEIGC

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
	Main Lug	#14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes)	TGL2
Copper Equipment Ground	Bonded	#14-#8 Cu, #12-#8 Al (small holes); #14-#4 Cu, #6-#4 Al (large holes)	TGC2
	Extruded Bonded	(1) #4-350MCM	AEBGC
	Extruded Isolated	(1) #6-250MCM	AEIGC
	Insulated Isolated	2/0 max.	ASPGIBC

Bonding Kits

Description	Cat. No.
For Split & Load End Neutral	343L886G16
For 225A Horizontal Neutrals	343L886G13
225A Horizontal Neutral To Convert 3W to 4W	ASP225HNCP
125/225A Horizontal Neutral Conversion from Service Entrance to Non-Service Entrance	ASPHNCPSENOT
125/225A Horizontal Neutral to Convert from Non-Service Entrance to Service Entrance	ASPHNCPSE

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 Lamicoid 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	NEMATRX
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	ASPCORBNTEU1
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.
20 x 5.81	Flush	9	ABX2509F
		18	ABX2518F
		24	ABX2524F
	Surface	9	ABX2509S
		18	ABX2518S
		24	ABX2524S
		31	ABX2531S
		37	ABX2537S
		43	ABX2543S
		49	ABX2549S
		55	ABX2555S
		64	ABX2564S
		76	ABX2576S
30 x 5.81	Flush	18	ABX3518F
		24	ABX3524F
	Surface	18	ABX3518S
		24	ABX3524S
30 x 7.81	Flush	18	ABX3718F
		24	ABX3724F
	Surface	18	ABX3718S
		24	ABX3724S

Box Extension Covers Only

10 covers per kit

Description	Cat. No.
9" Covers Surface	ASPABX09S
9" Covers Flush	ASPABX09F
18" Covers Surface	ASPABX18S
18" Covers Flush	ASPABX18F
64" to 76" Covers Surface	ASPABX20S
64" to 76" Covers Flush	ASPABX20F

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; knockouts are available when specified
- 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-44A	Typical AD Panelboard Technical Information
DEH 40007	Lighting Panels Rating Labels, Wiring Diagrams and Circuit Directory
DEH 047	TED, THED, SED, SHE, SEL, SEP Circuit Breaker Mounting Instructions
DEH 059	SGH, SFL, SFP Circuit Breaker Mounting Instructions
DEH 060	SGH, SGL, SGP Circuit Breaker Mounting Instructions
DEH 061	SKH, SKL, SKP Circuit Breaker Mounting Instructions
DEH 065	TQD, THQD Circuit Breaker Mounting Instructions

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