

# SOUTH INLAND RAW WATER PS

BOSSIER CITY PROJECT P14-02

SUBMITTAL FOR

## **Panelboards & Small Transformers**

**D-16462-001-A**

**7/1/14**

***Roy Thompson***

**Submittal Number**

**Date**

**Max Foote Construction**

**Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have reviewed and approved this submittal and checked and coordinated each item with other applicable approved shop drawings and all contract requirements.**

---

City of Bossier Project #P14-02  
South Inland Raw Water Pump Station

**Electrical**

**16462 Panelboards and Small Transformers**

**Submittals**

By

Feazel Electrical Contracting - Electrical Contractor

For

Max Foote Construction - General Contractor

Manchac Consulting Group - Engineers



Date: 06/30/2014

Bill of Material  
Bossier City South Inland  
SECTION 16462 Panelboards & Transformers BOM

Quote #: S032CD8  
Revision #: 4.0

Job Specific Clarifications:

\*\*\*5 padlock clips per panelboard and UPS provided by others\*\*\*

Item# Qty Description

- 3 1 Panelboard, Type AS (101)
  - RWP-PNL-030**
  - Single Section Panel Bottom Feed Surface Mnt 42 Ckts
  - 3P4W 480Y/277V 35 KAIC
  - 225A 3 Pole SFHA Main
  - 1 1-LUG/PH 1-CABLE/LUG #8 -350 MCM
  - 5 20A 1 Pole TEYH
  - 6 20A 1 Pole TEYH Space
  - 2 20A 2 Pole TEYH
  - 4 15A 3 Pole TEYH
  - 2 20A 3 Pole TEYH
  - 2 40A 3 Pole TEYH
  - 1 60A 3 Pole TEYH
  - 1 Aluminum Bus Heat Rated
  - 1 Corbin Latch Bolt 15767
  - 1 Front Hinged To Box
  - 1 Nameplates
  - 1 ME, 65kA/mode,130kA/phase (TVSS) TPME277Y06AS
  - 1 Ground main lug TGL20
  - 4 Ground-Box bonded TGL2
  - 1 AB64B Box
  - 1 AF64SDLN Front
  - 1 ASF3422KBX Interior AXT6
  
- 4 1 Panelboard, Type AQ (101)
  - RWP-PNL-040**
  - Single Section Panel Bottom Feed Surface Mnt 42 Ckts
  - 3P4W 208Y/120V 10 KAIC
  - 100A 3 Pole THQB Main
  - 1 1-LUG/PH 1-CABLE/LUG #14 -1/0
  - 18 20A 1 Pole THQB
  - 20 20A 1 Pole THQB Space
  - 1 30A 2 Pole THQB
  - 1 50A 2 Pole THQB
  - 1 Aluminum Bus Heat Rated
  - 1 Front Hinged To Box
  - 1 Nameplates
  - 1 ME, 65kA/mode,130kA/phase (TVSS) TPME120Y06AS
  - 3 Ground-Box bonded TGL2
  - 1 AB49B Box
  - 1 AF49SDN Front
  - 1 AQF3421ABX Interior AXT6



- 5 1 Panelboard, Type AQ (101)
  - RWP-PNL-050**
  - Single Section Panel Bottom Feed Surface Mnt 30 Ckts
  - 1P3W 120/240V 10 KAIC
  - 100A 2 Pole THQB Main
  - 1 1-LUG/PH 1-CABLE/LUG #14 -1/0
  - 10 20A 1 Pole THQB
  - 20 20A 1 Pole THQB Space
  - 1 Aluminum Bus Heat Rated
  - 1 Front Hinged To Box
  - 1 Nameplates
  - 1 ME, 65kA/mode,130kA/phase (TVSS) TPME120S06AS
  - 3 Ground-Box bonded TGL2
  - 1 AB43B Box
  - 1 AF43SDN Front
  - 1 AQF1301ABX Interior AXT6
  
- 6 1 Transformer 66KC
  - XFMR 30KVA**
  - 9T83C9872
  - 30 kVA 3 Ph Dry Type Transformer Coil Material = Copper
  - 60 Hz 150C Rise Type QL-TP1
  - Primary Voltage: 480
  - Secondary Voltage: 208Y/120
  - Electrostatic Shield: No

# A Series Panelboard

Item 3 RWP-PNL-030

### Panel Description

GE Type AS Panelboard  
 Qty 1  
 225 Amp,480Y/277V  
 3P4W  
 35 KAIC SC Fully Rated  
 Aluminum Bus  
 Nema 1 Enclosure  
 Surface Mounted  
 Bottom Feed

### Branch Devices

Qty	Amps/P	Cat#
5	20A/1P	TEYH1020B
6	20A/1P	Spaces
2	20A/2P	TEYH2020B
4	15A/3P	TEYH3015B
2	20A/3P	TEYH3020B
2	40A/3P	TEYH3040B
1	60A/3P	TEYH3060B

### Panel Interior

TVSS - DIRECT BUS CONNECTED					
Ckt	Type	Amps/P	Type	Amps/P	Ckt
1	TEYH	60/3	TEYH	40/3	2
	-	-	-	-	
	-	-	-	-	
7	TEYH	40/3	TEYH	20/3	8
	-	-	-	-	
	-	-	-	-	
13	TEYH	20/3	TEYH	15/3	14
	-	-	-	-	
	-	-	-	-	
19	TEYH	15/3	TEYH	15/3	20
	-	-	-	-	
	-	-	-	-	
25	TEYH	15/3	TEYH	20/2	26
	-	-	-	-	
	-	-	TEYH	20/2	30
31	TEYH	20/1	-	-	
33	TEYH	20/1	TEYH	20/1	34
35	TEYH	20/1	TEYH	20/1	36
37	SPACE	20/1	SPACE	20/1	38
39	SPACE	20/1	SPACE	20/1	40
41	SPACE	20/1	SPACE	20/1	42
225A VERTICAL MAIN BREAKER WITH NEUTRAL					
225A 3P SFHA					

\* Drawing not to scale

### Main Description

Amps: 225 Amp  
 Poles: 3 Pole  
 Type: Main Breaker  
 Cat No.: SFHA36AT0250+  
 Acc: SRPF250A225  
 Rating Plg  
 3TCAL29  
 Lug Kit  
 Lugs: 1-lug/ph 1-cable/lug  
 #8 -350 mcm

### Options Included

- 1 - Aluminum Bus Heat Rated
- 1 - Corbin Latch Bolt 15767
- 1 - Front Hinged To Box
- 1 - Nameplates
- 1 - ME, 65kA/mode,130kA/phase (TVSS) TPME277Y06AS
- 1 - Ground main lug TGL20
- 4 - Ground-Box bonded TGL2

<b>Job Name:</b>	Bossier City South Inland		
<b>Prop No:</b>	6L3-S032CD8	<b>GE Req#:</b>	
<b>PO#:</b>			
<b>Marks:</b>	RWP-PNL-030	<b>Dated:</b>	06/30/2014

<b>3A Interior</b>	ASF3422KBX AXT6
<b>3B Box</b>	AB64B
<b>3C Front</b>	AF64SDLN
<b>Dimensions</b>	64.5"H x 20"W x 5.75"D

# A Series Panelboard

# Item 4 RWP-PNL-040

### Panel Description

GE Type AQ Panelboard  
 Qty 1  
 125 Amp, 208Y/120V  
 3P4W  
 10 KAIC SC Fully Rated  
 Aluminum Bus  
 Nema 1 Enclosure  
 Surface Mounted  
 Bottom Feed

### Branch Devices

Qty	Amps/P	Cat#
18	20A/1P	THQB1120
20	20A/1P	Spaces
1	30A/2P	THQB2130
1	50A/2P	THQB2150

### Panel Interior

TVSS - DIRECT BUS CONNECTED					
Ckt	Type	Amps/P	Type	Amps/P	Ckt
1	THQB	50/2	THQB	30/2	2
	-	-	-	-	
5	THQB	20/1	THQB	20/1	6
7	THQB	20/1	THQB	20/1	8
9	THQB	20/1	THQB	20/1	10
11	THQB	20/1	THQB	20/1	12
13	THQB	20/1	THQB	20/1	14
15	THQB	20/1	THQB	20/1	16
17	THQB	20/1	THQB	20/1	18
19	THQB	20/1	THQB	20/1	20
21	THQB	20/1	THQB	20/1	22
23	SPACE	20/1	SPACE	20/1	24
25	SPACE	20/1	SPACE	20/1	26
27	SPACE	20/1	SPACE	20/1	28
29	SPACE	20/1	SPACE	20/1	30
31	SPACE	20/1	SPACE	20/1	32
33	SPACE	20/1	SPACE	20/1	34
35	SPACE	20/1	SPACE	20/1	36
37	SPACE	20/1	SPACE	20/1	38
39	SPACE	20/1	SPACE	20/1	40
41	SPACE	20/1	SPACE	20/1	42
	100A 3P THQB	-	-	-	
3	-		FILLER	-	
125A NEUTRAL ONLY					

\* Drawing not to scale

### Main Description

Amps: 100 Amp  
 Poles: 3 Pole  
 Type: Main Breaker  
 Cat No.: THQB32100  
 Acc:  
 Lugs: 1-lug/ph 1-cable/lug  
 #14 -1/0

### Options Included

- 1 - Aluminum Bus Heat Rated
- 1 - Front Hinged To Box
- 1 - Nameplates
- 1 - ME, 65kA/mode, 130kA/phase (TVSS) TPME120Y06AS
- 3 - Ground-Box bonded TGL2

<b>Job Name:</b>	Bossier City South Inland		
<b>Prop No:</b>	6L3-S032CD8	<b>GE Req#:</b>	
<b>PO#:</b>			
<b>Marks:</b>	RWP-PNL-040	<b>Dated:</b>	06/30/2014

<b>4A Interior</b>	AQF3421ABX AXT6
<b>4B Box</b>	AB49B
<b>4C Front</b>	AF49SDN
<b>Dimensions</b>	49.5"H x 20"W x 5.75"D

# A Series Panelboard

# Item 5 RWP-PNL-050

### Panel Description

GE Type AQ Panelboard  
 Qty 1  
 125 Amp,120/240  
 1P3W  
 10 KAIC SC Fully Rated  
 Aluminum Bus  
 Nema 1 Enclosure  
 Surface Mounted  
 Bottom Feed

### Branch Devices

Qty	Amps/P	Cat#
10	20A/1P	THQB1120
20	20A/1P	Spaces

### Panel Interior

TVSS - DIRECT BUS CONNECTED					
Ckt	Type	Amps/P	Type	Amps/P	Ckt
1	THQB	20/1	THQB	20/1	2
3	THQB	20/1	THQB	20/1	4
5	THQB	20/1	THQB	20/1	6
7	THQB	20/1	THQB	20/1	8
9	THQB	20/1	THQB	20/1	10
11	SPACE	20/1	SPACE	20/1	12
13	SPACE	20/1	SPACE	20/1	14
15	SPACE	20/1	SPACE	20/1	16
17	SPACE	20/1	SPACE	20/1	18
19	SPACE	20/1	SPACE	20/1	20
21	SPACE	20/1	SPACE	20/1	22
23	SPACE	20/1	SPACE	20/1	24
25	SPACE	20/1	SPACE	20/1	26
27	SPACE	20/1	SPACE	20/1	28
29	SPACE	20/1	SPACE	20/1	30
	100A 2P THQB	-	-	-	
2	-		FILLER	-	
125A NEUTRAL ONLY					

\* Drawing not to scale

### Main Description

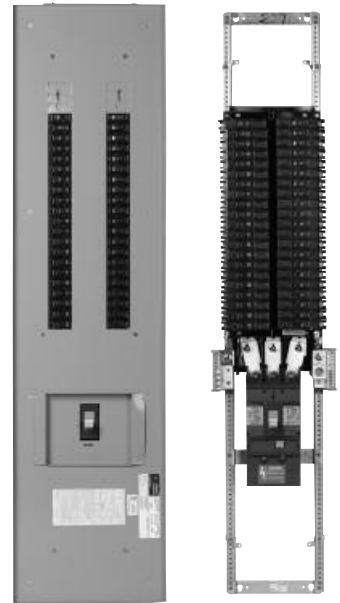
Amps: 100 Amp  
 Poles: 2 Pole  
 Type: Main Breaker  
 Cat No.: THQB21100  
 Acc:  
 Lugs: 1-lug/ph 1-cable/lug  
 #14 -1/0

### Options Included

- 1 - Aluminum Bus Heat Rated
- 1 - Front Hinged To Box
- 1 - Nameplates
- 1 - ME, 65kA/mode,130kA/phase (TVSS) TPME120S06AS
- 3 - Ground-Box bonded TGL2

<b>Job Name:</b>	Bossier City South Inland		
<b>Prop No:</b>	6L3-S032CD8	<b>GE Req#:</b>	
<b>PO#:</b>			
<b>Marks:</b>	RWP-PNL-050	<b>Dated:</b>	06/30/2014

<b>5A Interior</b>	AQF1301ABX AXT6
<b>5B Box</b>	AB43B
<b>5C Front</b>	AF43SDN
<b>Dimensions</b>	43.5"H x 20"W x 5.75"D



# Typical AQ/AL 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 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 Application 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



imagination at work



## 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						
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
HQ Frame	THQB	15-70	1	120/240		12a	10	10					
	THQL	15-125	2	120/240		12a		10					
		15-100	2,3	240		12a			10				
	THQL-GF	15-30	1,2	120/240				10					
	THQL-HID	15-20	1,2	120/240				10					
	THQB-GF	15-30	1,2	120/240				10					
	THQB-HID	15-20	1,2	120/240				10					
TXQB	15-30	1,2	120/240				65						
HHQ Frame	THHQB	15-70	1	120/240		14a	22	22					
	THHQL	15-125	2	120/240		14a		22					
		15-100	2	240		14b			22				
		15-100	3	240		14b			22				
	THHQL-GF	15-30	1	120/240				22					
	THHQL-HID	15-20	1,2	120/240				22					
	THHQB-GF	15-30	1	120/240				22					
THHQB-HID	15-20	1,2	120/240				22						
Standard Frames	TQD	125-225	2,3	240		12b			10				
	TJD	250-400	2,3	240	250 (1)	14b			22				
Hi-Break Frames	THQD	125-225	2,3			N/A			22				
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

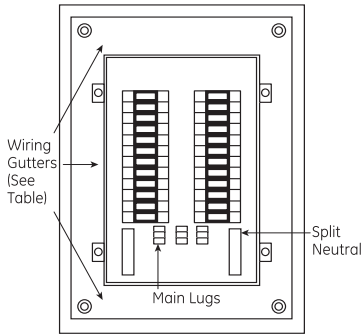
## Circuit Breaker Terminals (Cu-Al)

Frame		Poles	No. per Pole	Cat. No.	Wire Cu-Al (Unless otherwise specified)	
Standard	Current Limiting / High Interrupting				Per Lug	Range
THQB, TXQB, THHQB, THQL, THHQL, TXQL	-	1,2,3	1	Fixed to Breaker Terminal	1	(15-30A) #14-4 Cu or #12-4 Al, (35-100A) #14-10 Cu or #12-1/0 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	-	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
-	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

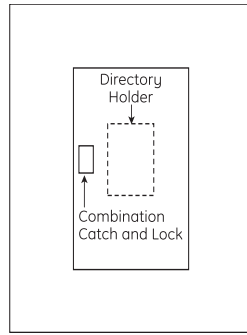
## Typical Panelboard

Front view with trim removed

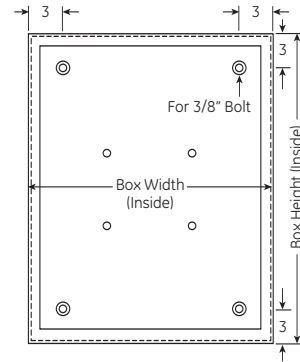


## Typical Front w/Concealed Hinges and Trim Adjusting Screws

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 (1)	SF, SG, FG	Vertical	-	15	11 (1)
600A	15	11 (1)	SG	Vertical	-	16	-
800A (2)	15	11 (1)	SK	Vertical	-	18	-

(1) To side wall

(2) 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	THQL, THHQL, THQB, THQB	1,2,3	6.5"
Horizontal Subfeeds Single Branch Mounted	TQD, THQD	2,3	5.5"

## Enclosures

Panel Size	Box		Front Cat. No. (3)
	Cat. No. (1)	Size Inches (2)	
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

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

(2) Standard boxes are 20" wide by 5.81" 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	20	6	AB254S	AB254AS
25.5	30	8	AB254DWS	AB254DWS
31.5	20	6	AB314S	AB314AS
31.5	30	8	AB314DWS	AB314DWS
37.5	20	6	AB374S	AB374AS
37.5	30	8	AB374DWS	AB374DWS
43.5	20	6	AB434S	AB434AS
43.5	30	8	AB434DWS	AB434DWS
49.5	20	6	AB494S	AB494AS
49.5	30	8	AB494DWS	AB494DWS
55.5	20	6	AB554S	AB554AS
55.5	30	8	AB554DWS	AB554DWS
64.5	20	6	AB644S	AB644AS
64.5	30	8	AB644DWS	AB644DWS
76.5	20	6	AB764S	AB764AS
76.5	30	8	AB764DWS	AB764DWS

## Accessories

Field Installed Kits/Replacement Parts

### Filler Plates

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

### Endwall Kits

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

Type	Cat. No.
Blank	ABEW2
Knockout	ABEW2

### Breaker Mounting Hardware Kits

For mounting breaker in existing space

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

### 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 Lamicoide 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.
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-42A	Typical AL/AQ 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

### GE

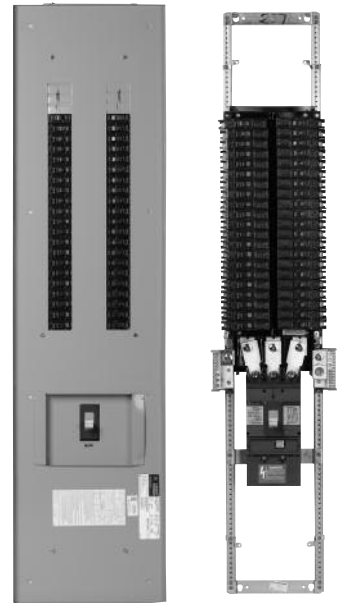
41 Woodford Avenue, Plainville, CT 06062

[www.geelectrical.com](http://www.geelectrical.com)

© 2008 General Electric Company



imagination at work



# Typical AS 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 250A 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 Application 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



imagination at work

## 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

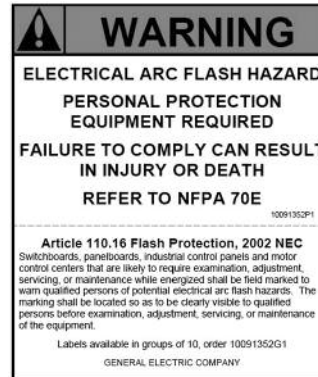
Rating	Pressure Lug Kit		Crimp Lug Kit		Pressure Lug Kit	
	Cat. No.	Wire Range Al/Cu	Cat. No.	Wire Range Al/Cu	Cat. No.	Wire Range Cu Only
125A	MLA1	6-350	MLT1	4-300	MLR1	4-350
225A	MLA2	1/0-250	MLT2	2/0 - 500	MLR2	1/0-600
400A	Standard - MLA41	4-600	MLT41	500-750 (Cu Only)	MLR41	1/0-600
	Oversize - 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							
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	TEYD/H/L	15-70	1	480Y/277	250	13a			65	25/35/65				
		15-125	2,3	480Y/277	250	13a			65		25/35/65			
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 (1)	125-400	2,3	600		21a, 23a			65				35	25
	SGH6 (1)	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) Not current limiting breaker type

## Circuit Breaker Terminals (Cu-Al)

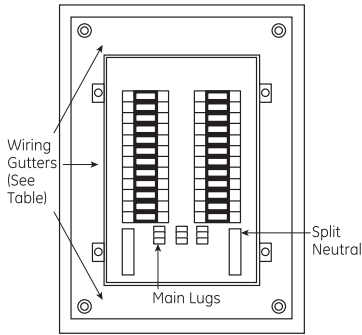
Frame		Poles	No. per Pole	Cat. No.	Wire Cu-Al (Unless otherwise specified)	
Standard	Current Limiting / High Interrupting				Per Lug	Range
-	TEYD/H/L	1,2,3	1	Fixed to Breaker Terminal	1	(15-20A) #14-#10 Cu or Al, (25-60A) #10-#4 Cu or Al, (70-125A) #4-#1/0 Cu or Al
-	SEH, SEL, SEP	2,3	1	TCAL18	1	#12-3/0 Al; #12-3/0 Cu
SFHA	SFLA, SFPA	2,3	1	TCAL129	1	#8-350kcmil
SGHA	SGL, SGP	2	1	TCLK265	-	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
-	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

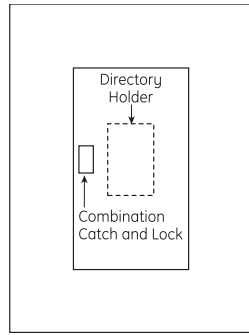
## Typical Panelboard

Front view with trim removed

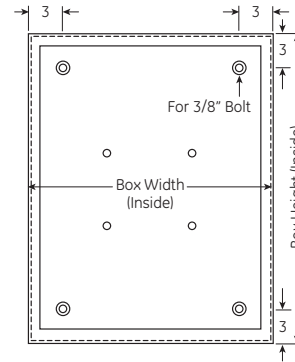


## Typical Front w/Concealed Hinges and Trim Adjusting Screws

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 To Side Wall (20" Wide box)	To End Wall	Neutral Lug
125A MLO, 100A Main Breaker	6	6	TEY, SE	Horizontal	4	-	6
225A	12	12	TFJ, SF	Vertical	-	6	12
400A	15	11 (1)	SF, SG, FG	Vertical	-	15	11 (1)
600A	15	11 (1)	SG	Vertical	-	16	-
800A (2)	15	11 (1)	SK	Vertical	-	18	-

(1) To side wall

(2) 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	TEYD/H/L	1,2,3	5.5"
Horizontal Subfeeds, Single Branch Mounted, Maximum 9 Poles	SEHA, SELA	2,3	
Horizontal Subfeeds, Single Branch Mounted, Maximum 6 Poles	SFHA, SFLA	2,3	5.5"

## Enclosures

Panel Size	Box Cat. No. (1)	Size Inches (2)	Front Cat. No. (3)
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

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

(2) Standard boxes are 20" wide by 5.81" 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 (4)	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.

(4) Not available with Type AS panel.

## 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	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

## General Accessories

Field Installed Kits/Replacement Parts

### Filler Plates

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

### Endwall Kits

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

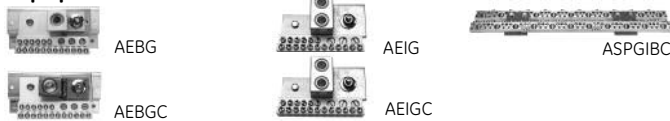
Type	Cat. No.
Blank	ABEW2
Knockout	ABEW2

### Breaker Mounting Hardware Kits

For mounting breaker in existing space

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

### Equipment Grounds



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 <sup>(1)</sup>	569B737P1
Replacement Lock with GE75 Key <sup>(1)</sup>	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 Lamicoide 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/AS Rail Bracket	ASPAQLEBKT
Front Flush Adjust Kit	ASPFLUSHADJ
AE/AS 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

(1) Not available with Type AS panel.

### 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 Corbin Lock 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
- 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
- DEQ 195 TEYD/H/L Circuit Breakers in A Series Panelboards

### GE Energy

41 Woodford Avenue, Plainville, CT 06062

[www.geindustrial.com](http://www.geindustrial.com)

© 2013 General Electric Company



imagination at work

## Introduction

Recommended installation locations are primary and secondary distribution and point of use levels. Designed for distribution and point of use locations, but rated for service entrance, the Tranquell™ ME with enhanced thermal protection has been third-party tested to ANSI/IEEE C3 10kA 8x20μs impulses. The Tranquell™ ME Series is designed for rigorous duty and long life, as evidenced in our outstanding minimum repetitive surge current capacity test results.

These Surge Protective Device (SPD) models connect directly to GE A-Series panelboard bus bars without adding width or depth to the panel enclosure. Third-party tested per IEEE C62.62 and NEMA LS-1 for the rated 8x20μs surge current, per mode with fusing included. Mounted to the bus bars, a breaker feeder is not required or used. This design allows for maximum protection. Ratings are available from 65kA to 100kA per mode (130kA to 200kA per phase).

GE engineers design and build surge protective devices in our state-of-the-art lab and production facilities. Extensive testing is performed at GE and third-party test labs across North America.

## Features and Benefits

- > UL 1449 3<sup>rd</sup> Edition, Type 1 or Type 2
- > UL 96A Lightning Protection Systems
- > Optional UL 1283 noise filtering. The SPD device EMI-RFI noise rejection or attenuation value is measured in accordance with the procedures outlined in NEMA LS 1-1992 (R2000)/MIL-STD-220B. Attenuation is -50db minimum @ 100kHz.
- > UL tested to 100,000 amperes symmetrical withstand
- > Device is capable of surviving a minimum of 5,000 category C3 impulses (10kA, 20kV) per mode
- > Thermally protected MOVs eliminate the need for additional upstream fuses
- > NO/NC Form C dry type contacts for remote monitoring
- > Third-party tested to maximum surge rating as a complete assembly
- > 10 modes of protection (L-N, L-G, N-G, L-L)
- > Green status indicating lights, red service light
- > Audible alarm with test/disable feature
- > Optional LCD surge counter
- > Factory installed in GE A-Series Panelboards, UL 67 listed
- > 5 year limited warranty (standard), 10 year limited warranty (optional)

## Integrated Tranquell™ ME

Surge Protective Device (SPD)  
with Enhanced Thermal Protection

Direct Bus Connected Within  
GE A-Series™ Panelboards



Typical GE A-Series™  
Branch Panel Interior

## Technical Specifications

### Operating Frequency

50/60 Hz

### Connection

Direct Bus, Parallel Connected

### Operating Temperature

-40° F to 149° F (-40° C to +65° C)

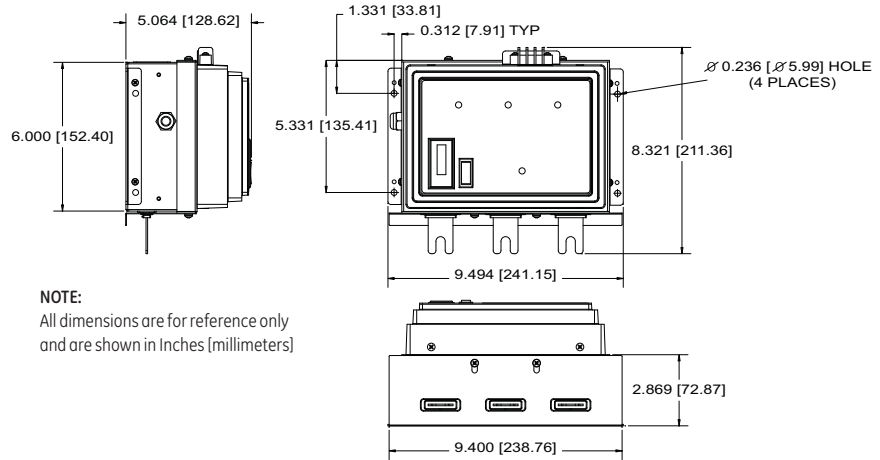
### Operating Humidity

0% to 95% Non-Condensing

### Weight

13 lbs. (5.9 kg)

## Dimensions



NOTE:  
All dimensions are for reference only  
and are shown in Inches (millimeters)

## Catalog # T P M E 2 7 7 Y 0 6 A S

	Nominal Voltage (Volts RMS)	System Voltage Configuration	MCOV Max. Continuous Operating Voltage L-N/G (Vrms)	Maximum Surge Current Capacity	
				Per Mode	Per Phase
120S	120/240	1 Ph, 3 W + G	150	06	65kA 130kA
120Y	120Y/208	3 Ph, 4 W + G	150	08	80kA 160kA
240D	240 Delta	3 Ph, 3 W	270	10	100kA 200kA
240H	120/240 Delta HL	3 Ph, 4 W + G	150/270 HL		
240Y	240Y/415	3 Ph, 4 W + G	320		
277Y	277Y/480	3 Ph, 4 W + G	320		
220Y	220Y/380	3 Ph, 4 W + G	320		
480D	480 Delta	3 Ph, 3 W	550		
347Y	347Y/600	3 Ph, 4 W + G	420		

- AS** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 2 locations
- ASNF** = without EMI/RFI noise filtering (Available 100kA per Mode) only for UL Type 2 locations
- ASNC** = without EMI/RFI noise filtering, without surge counter for UL Type 2 locations (Available 100kA per Mode) only
- AST1** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 1 locations



Phase Rating = (L-N + L-G)

### Catalog # example: TPME277Y10AS

- 277Y/480 V, 3 Ph, 4 W + G
- 100kA per mode
- Full featured, with UL 1283 noise filtering and surge counter

## Protection Ratings

Voltage Code	120S / 120Y				240D		240H						220V / 240Y / 277Y				347Y				480D		
Protection Mode	L-N	L-G	N-G	L-L	L-G	L-L	L-N	HL-N	L-G	HL-G	N-G	L-L	HL-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
UL 1449, 3 <sup>rd</sup> Edition Voltage Protection Ratings (VPR) (assigned UL rating)	700	600	600	1200	900	1800	700	1200	600	1000	600	1200	1900	1200	1000	1000	2000	1500	1500	1500	3000	1500	3000
UL 1449, 2 <sup>nd</sup> Edition Suppression Voltage Ratings (SVR) (assigned UL rating) *	500	500	500	700	800	1500	500	700	500	700	500	900	-	800	800	800	1500	1200	1000	1000	2000	1500	3000
B3 Ring Wave Clamping Voltage @ 6kV, 500A	441	443	440	719	733	1207	437	-	438	-	440	789	-	727	800	792	1340	832	967	970	1657	1177	1643
C3 Combo Wave Clamping Voltage @ 20kV, 10kA	673	547	564	883	840	1547	670	-	548	-	564	1093	-	993	937	1000	1667	1420	1180	1180	2880	1547	2880

\* NOTE: SVR Ratings are no longer assigned by UL and are included in the table above for reference purposes only.



GE Digital Energy - Power Quality  
830 W 40th Street, Chicago, IL 60609 USA  
800 637 1738 [www.gepowerquality.com](http://www.gepowerquality.com)

Information subject to change without notice. Please verify all details with GE.  
DEA-390 (12/09) © 2009 General Electric Company All Rights Reserved

## Introduction

Recommended installation locations are primary and secondary distribution and point of use levels. Designed for distribution and point of use locations, but rated for service entrance, the Tranquell™ ME with enhanced thermal protection has been third-party tested to ANSI/IEEE C3 10kA 8x20μs impulses. The Tranquell™ ME Series is designed for rigorous duty and long life, as evidenced in our outstanding minimum repetitive surge current capacity test results.

These Surge Protective Device (SPD) models connect directly to GE A-Series panelboard bus bars without adding width or depth to the panel enclosure. Third-party tested per IEEE C62.62 and NEMA LS-1 for the rated 8x20μs surge current, per mode with fusing included. Mounted to the bus bars, a breaker feeder is not required or used. This design allows for maximum protection. Ratings are available from 65kA to 100kA per mode (130kA to 200kA per phase).

GE engineers design and build surge protective devices in our state-of-the-art lab and production facilities. Extensive testing is performed at GE and third-party test labs across North America.

## Features and Benefits

- > UL 1449 3<sup>rd</sup> Edition, Type 1 or Type 2
- > UL 96A Lightning Protection Systems
- > Optional UL 1283 noise filtering. The SPD device EMI-RFI noise rejection or attenuation value is measured in accordance with the procedures outlined in NEMA LS 1-1992 (R2000)/MIL-STD-220B. Attenuation is -50db minimum @ 100kHz.
- > UL tested to 100,000 amperes symmetrical withstand
- > Device is capable of surviving a minimum of 5,000 category C3 impulses (10kA, 20kV) per mode
- > Thermally protected MOVs eliminate the need for additional upstream fuses
- > NO/NC Form C dry type contacts for remote monitoring
- > Third-party tested to maximum surge rating as a complete assembly
- > 10 modes of protection (L-N, L-G, N-G, L-L)
- > Green status indicating lights, red service light
- > Audible alarm with test/disable feature
- > Optional LCD surge counter
- > Factory installed in GE A-Series Panelboards, UL 67 listed
- > 5 year limited warranty (standard), 10 year limited warranty (optional)

## Integrated Tranquell™ ME

Surge Protective Device (SPD)  
with Enhanced Thermal Protection

Direct Bus Connected Within  
GE A-Series™ Panelboards



Typical GE A-Series™  
Branch Panel Interior



## Technical Specifications

### Operating Frequency

50/60 Hz

### Connection

Direct Bus, Parallel Connected

### Operating Temperature

-40° F to 149° F (-40° C to +65° C)

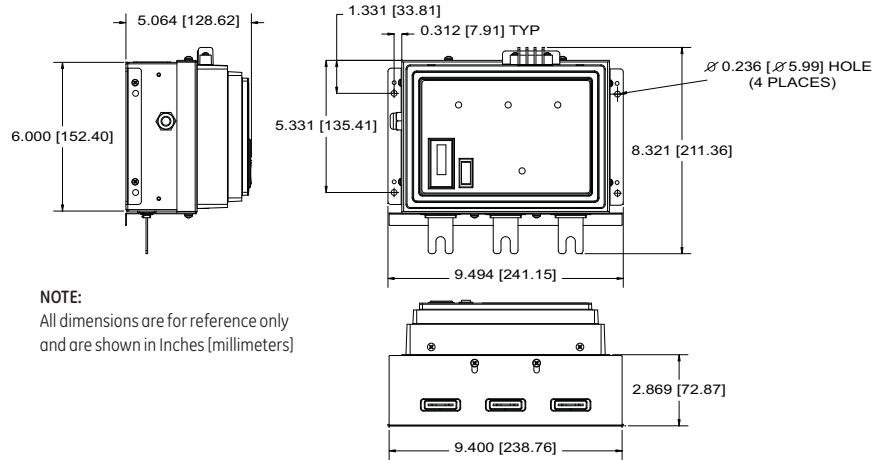
### Operating Humidity

0% to 95% Non-Condensing

### Weight

13 lbs. (5.9 kg)

## Dimensions



NOTE:  
All dimensions are for reference only  
and are shown in Inches (millimeters)

## Catalog # T P M E 1 2 0 Y 0 6 A S

	Nominal Voltage (Volts RMS)	System Voltage Configuration	MCOV Max. Continuous Operating Voltage L-N/G (Vrms)	Maximum Surge Current Capacity	
				Per Mode	Per Phase
120S	120/240	1 Ph, 3 W + G	150	06	65kA 130kA
120Y	120Y/208	3 Ph, 4 W + G	150	08	80kA 160kA
240D	240 Delta	3 Ph, 3 W	270	10	100kA 200kA
240H	120/240 Delta HL	3 Ph, 4 W + G	150/270 HL		
240Y	240Y/415	3 Ph, 4 W + G	320		
277Y	277Y/480	3 Ph, 4 W + G	320		
220Y	220Y/380	3 Ph, 4 W + G	320		
480D	480 Delta	3 Ph, 3 W	550		
347Y	347Y/600	3 Ph, 4 W + G	420		

- AS** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 2 locations
- ASNF** = without EMI/RFI noise filtering (Available 100kA per Mode) only for UL Type 2 locations
- ASNC** = without EMI/RFI noise filtering, without surge counter for UL Type 2 locations (Available 100kA per Mode) only
- AST1** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 1 locations



Phase Rating = (L-N + L-G)

### Catalog # example: TPME277Y10AS

- 277Y/480 V, 3 Ph, 4 W + G
- 100kA per mode
- Full featured, with UL 1283 noise filtering and surge counter

## Protection Ratings

Voltage Code	120S / 120Y				240D		240H						220V / 240Y / 277Y				347Y				480D		
Protection Mode	L-N	L-G	N-G	L-L	L-G	L-L	L-N	HL-N	L-G	HL-G	N-G	L-L	HL-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
UL 1449, 3 <sup>rd</sup> Edition Voltage Protection Ratings (VPR) (assigned UL rating)	700	600	600	1200	900	1800	700	1200	600	1000	600	1200	1900	1200	1000	1000	2000	1500	1500	1500	3000	1500	3000
UL 1449, 2 <sup>nd</sup> Edition Suppression Voltage Ratings (SVR) (assigned UL rating) *	500	500	500	700	800	1500	500	700	500	700	500	900	-	800	800	800	1500	1200	1000	1000	2000	1500	3000
B3 Ring Wave Clamping Voltage @ 6kV, 500A	441	443	440	719	733	1207	437	-	438	-	440	789	-	727	800	792	1340	832	967	970	1657	1177	1643
C3 Combo Wave Clamping Voltage @ 20kV, 10kA	673	547	564	883	840	1547	670	-	548	-	564	1093	-	993	937	1000	1667	1420	1180	1180	2880	1547	2880

\* NOTE: SVR Ratings are no longer assigned by UL and are included in the table above for reference purposes only.



GE Digital Energy - Power Quality  
830 W 40th Street, Chicago, IL 60609 USA  
800 637 1738 [www.gepowerquality.com](http://www.gepowerquality.com)

Information subject to change without notice. Please verify all details with GE.  
DEA-390 (12/09) © 2009 General Electric Company All Rights Reserved

## Introduction

Recommended installation locations are primary and secondary distribution and point of use levels. Designed for distribution and point of use locations, but rated for service entrance, the Tranquell™ ME with enhanced thermal protection has been third-party tested to ANSI/IEEE C3 10kA 8x20μs impulses. The Tranquell™ ME Series is designed for rigorous duty and long life, as evidenced in our outstanding minimum repetitive surge current capacity test results.

These Surge Protective Device (SPD) models connect directly to GE A-Series panelboard bus bars without adding width or depth to the panel enclosure. Third-party tested per IEEE C62.62 and NEMA LS-1 for the rated 8x20μs surge current, per mode with fusing included. Mounted to the bus bars, a breaker feeder is not required or used. This design allows for maximum protection. Ratings are available from 65kA to 100kA per mode (130kA to 200kA per phase).

GE engineers design and build surge protective devices in our state-of-the-art lab and production facilities. Extensive testing is performed at GE and third-party test labs across North America.

## Features and Benefits

- > UL 1449 3<sup>rd</sup> Edition, Type 1 or Type 2
- > UL 96A Lightning Protection Systems
- > Optional UL 1283 noise filtering. The SPD device EMI-RFI noise rejection or attenuation value is measured in accordance with the procedures outlined in NEMA LS 1-1992 (R2000)/MIL-STD-220B. Attenuation is -50db minimum @ 100kHz.
- > UL tested to 100,000 amperes symmetrical withstand
- > Device is capable of surviving a minimum of 5,000 category C3 impulses (10kA, 20kV) per mode
- > Thermally protected MOVs eliminate the need for additional upstream fuses
- > NO/NC Form C dry type contacts for remote monitoring
- > Third-party tested to maximum surge rating as a complete assembly
- > 10 modes of protection (L-N, L-G, N-G, L-L)
- > Green status indicating lights, red service light
- > Audible alarm with test/disable feature
- > Optional LCD surge counter
- > Factory installed in GE A-Series Panelboards, UL 67 listed
- > 5 year limited warranty (standard), 10 year limited warranty (optional)

## Integrated Tranquell™ ME

Surge Protective Device (SPD)  
with Enhanced Thermal Protection

Direct Bus Connected Within  
GE A-Series™ Panelboards



Typical GE A-Series™  
Branch Panel Interior



## Technical Specifications

### Operating Frequency

50/60 Hz

### Connection

Direct Bus, Parallel Connected

### Operating Temperature

-40° F to 149° F (-40° C to +65° C)

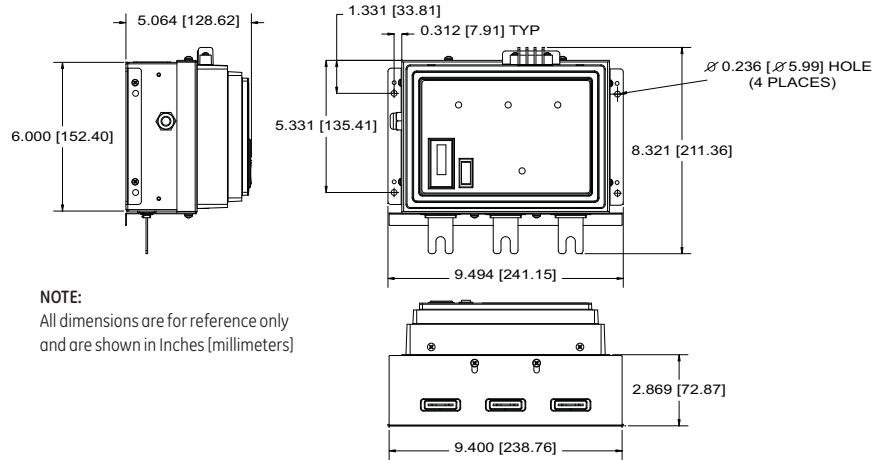
### Operating Humidity

0% to 95% Non-Condensing

### Weight

13 lbs. (5.9 kg)

## Dimensions



NOTE:  
All dimensions are for reference only  
and are shown in Inches (millimeters)

## Catalog # T P M E 1 2 0 S 0 6 A S

	Nominal Voltage (Volts RMS)	System Voltage Configuration	MCOV Max. Continuous Operating Voltage L-N/G (Vrms)	Maximum Surge Current Capacity	
				Per Mode	Per Phase
<b>120S</b>	120/240	1 Ph, 3 W + G	150	<b>06</b>	65kA 130kA
<b>120Y</b>	120Y/208	3 Ph, 4 W + G	150	<b>08</b>	80kA 160kA
<b>240D</b>	240 Delta	3 Ph, 3 W	270	<b>10</b>	100kA 200kA
<b>240H</b>	120/240 Delta HL	3 Ph, 4 W + G	150/270 HL		
<b>240Y</b>	240Y/415	3 Ph, 4 W + G	320		
<b>277Y</b>	277Y/480	3 Ph, 4 W + G	320		
<b>220Y</b>	220Y/380	3 Ph, 4 W + G	320		
<b>480D</b>	480 Delta	3 Ph, 3 W	550		
<b>347Y</b>	347Y/600	3 Ph, 4 W + G	420		

- AS** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 2 locations
- ASNF** = without EMI/RFI noise filtering (Available 100kA per Mode) only for UL Type 2 locations
- ASNC** = without EMI/RFI noise filtering, without surge counter for UL Type 2 locations (Available 100kA per Mode) only
- AST1** = Full featured, with UL 1283 noise filtering and surge counter for UL Type 1 locations



Phase Rating = (L-N + L-G)

### Catalog # example: TPME277Y10AS

- 277Y/480 V, 3 Ph, 4 W + G
- 100kA per mode
- Full featured, with UL 1283 noise filtering and surge counter

## Protection Ratings

Voltage Code	120S / 120Y				240D		240H						220V / 240Y / 277Y				347Y				480D		
Protection Mode	L-N	L-G	N-G	L-L	L-G	L-L	L-N	HL-N	L-G	HL-G	N-G	L-L	HL-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
UL 1449, 3 <sup>rd</sup> Edition Voltage Protection Ratings (VPR) (assigned UL rating)	700	600	600	1200	900	1800	700	1200	600	1000	600	1200	1900	1200	1000	1000	2000	1500	1500	1500	3000	1500	3000
UL 1449, 2 <sup>nd</sup> Edition Suppression Voltage Ratings (SVR) (assigned UL rating) *	500	500	500	700	800	1500	500	700	500	700	500	900	-	800	800	800	1500	1200	1000	1000	2000	1500	3000
B3 Ring Wave Clamping Voltage @ 6kV, 500A	441	443	440	719	733	1207	437	-	438	-	440	789	-	727	800	792	1340	832	967	970	1657	1177	1643
C3 Combo Wave Clamping Voltage @ 20kV, 10kA	673	547	564	883	840	1547	670	-	548	-	564	1093	-	993	937	1000	1667	1420	1180	1180	2880	1547	2880

\* NOTE: SVR Ratings are no longer assigned by UL and are included in the table above for reference purposes only.



GE Digital Energy - Power Quality  
830 W 40th Street, Chicago, IL 60609 USA  
800 637 1738 [www.gepowerquality.com](http://www.gepowerquality.com)

Information subject to change without notice. Please verify all details with GE.  
DEA-390 (12/09) © 2009 General Electric Company All Rights Reserved

GE

# QL Dry Type Transformers

Up to 99% efficient  
100% tested



imagination at work

# QL Dry Type Transformers

Our QL transformers are setting new standards for quality – in design, manufacturing and testing. Before leaving the GE factory, every QL transformer must pass a series of rigorous tests, performed with advanced equipment, on a range of measurements.



We test for:

- **Shorts and coil integrity** to help ensure high initial quality and years of trouble-free operation
- **Current and loss** to help ensure peak efficiency, low noise and the lowest operating cost possible
- **Voltage** to help ensure that input and output voltages are exactly as specified
- **Impedance** to help ensure the transformer is producing power that's friendly to your building and equipment

That's why you can be sure you'll get the highest initial quality and years of trouble-free operation.

## All QL transformers feature:

- NEMA TP-1 2002 compliance
- Clear, comprehensive documentation and labeling
- Single-piece front/back for easier service
- Accessible mounting flanges with front/back slotted mounting holes to speed installation
- Seismic qualifications to the requirements of ASCE 7.05, IEEE-693-2005 and IBC-2006
- 200% neutral standard
- Copper ground strap standard
- Full capacity, universal taps consisting of two 2.5% above nominal and four 2.5% below nominal
- Robust packaging with top and edge protection
- 220°C insulation system
- 40°C ambient
- 10kV-BIL
- Copper or aluminum windings
- UL Listing
- Standard NEMA 2 drip-proof enclosure with optional weathershield kit for conversion to NEMA 3R outdoor
- A one-year limited warranty

## NEW QL Ultra Efficient Up to 99% efficient

More energy efficient than the TP-1 design, the QL Ultra Efficient transformer – GE's newest – can save customers nearly \$4,000 per year in operating costs, based on a facility the size of an elementary school\*, and help them earn U. S. Green Building Council's LEED® certification points on a project. It's significantly quieter than standard transformers and features all of the convenience and reliability you expect from a QL transformer. It's perfect for schools and colleges and for government, healthcare and commercial buildings.

## Features and benefits

- Efficiency up to 99% reduces operating cost by 30%
- Low core loss with maximum efficiency under low-load conditions
- Aids in qualifying for more LEED points for sustainable building appeal
- Ultra quiet operation
- Prime-9 offering with all standard options fit many applications
- K1, K4 and K13 models available. K-factor models available in 150°C and 115°C rise

\*Based on upgrading pre-2007 (non-TP-1) GE transformers at an elementary school with 13 transformers, ranging in size from 30kVA to 112.5 kVA and energy costs of \$.077/kwh to the equivalent GE QL Ultra transformers.



## QL K Factor

### *How to handle non-linear loads*

K-Factor transformers are more robust than standard transformers, so they are better able to withstand the additional heating that accompanies the presence of harmonics in electrical systems. K-factor transformers are designed not to eliminate harmonics, but to withstand their negative effects.

#### Features and benefits

- UL K-Factor Listed. UL 1561 listed
- Full-width copper electrostatic shielding standard
- Effective coupling capacitance 30 PF between primary and secondary

## QL Low Noise

### *The quiet performers*

These low noise transformers operate at reduced noise levels. The vibrations within the magnetic steel core have been greatly reduced, thus reducing transformer hum. QL Low-Noise transformers operate at 3dB less than NEMA/ANSI standards.

#### Features and benefits

- Great for noise-sensitive areas
- Operation at -3dB below NEMA standard
- 150°C, 115°C or 80°C rise

## QL Guard I, II, III Noise Isolation

### *Extra protection for sensitive equipment*

Installations with sensitive electronic equipment – computer rooms, x-ray rooms, electrical laboratories, etc. – need the extra protection offered by GE's Guard I, II and III transformers.

#### Guard I

- Grounded copper electrostatic shield between primary and secondary windings
- 120dB common-mode noise protection
- 30dB transverse-mode noise protection

#### Guard II

- Grounded copper electrostatic shield between primary and secondary windings
- Noise suppressors and spike/surge suppressors
- 120dB common-mode noise protection
- 60dB transverse-mode noise protection



#### Guard III

- Saves energy by reducing harmonic losses
- Eliminates transformer overheating and high operating temperatures
- Maintains energy efficiency even when harmonics are present in the electrical system
- Helps eliminate power quality problems that K-factor transformers do not

## QL Totally Enclosed Non-Ventilated (TENV)

Totally enclosed nonventilated (TENV) transformers are an excellent choice for applications where standard dry-type transformer enclosure openings are not acceptable because dust, dirt or lint may be present or because transformers are subject to sprays or controlled wash-down conditions.

#### Features and benefits

- Convenient wiring compartment beneath the transformer has removable front and rear covers
- Clearly labeled copper bus bars are located at the front of the wiring compartment
- All electrical connections between the transformer and bus bars are factory wired



## QL Drive Isolation Transformers (DIT)

### *Built for SCR stresses*

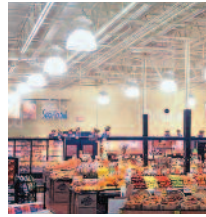
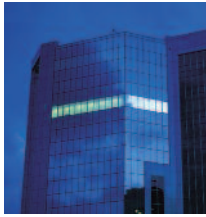
QL Drive Isolation Transformers (DIT) are designed specifically to handle the use of SCR control circuitry of adjustable-speed drives. Symmetrically placed taps and added coil bracing are able to withstand the mechanical forces involved. They also reduce line pollution feedback resulting from SCR firing circuits.

#### Features and benefits

- Voltages up to 600V
- Conforms to ANSI, NEMA, UL and IEEE standards
- 3-15 KVA 3 phase and 5-25 KVA 1 phase



# QL Transformer Selection Guide



Application	QL General Purpose	QL Ultra Efficiency	QL K - Factor (K=4)	QL K - Factor (K=13)	QL K - Factor (K=20)	QL K - Factor (K=30)	QL Low Noise	QL Drive Isolation
AC or DC variable speed drives								■
Computer installations					■	■		
Critical care facilities					■	■	■	
Data processing equipment circuits					■	■		
HID lighting			■					
Hospital operating rooms					■	■		
Incandescent lighting	■		■					
Induction heaters			■					
Instrumentation					■	■		
LEED projects		■						
Maximum energy efficiency		■						
Motor generators (without solid state drives)	■		■					
Motors	■		■					
Multiple receptacle circuits in health care facilities				■				
Office buildings		■		■			■	
PLC & solid state controls			■					
Production or assembly line equipment				■				
Programmable controllers					■	■		
Rectifier outputs								■
Resistance heating	■		■					
Schools & classroom facilities		■		■			■	
SCR variable speed drives					■	■		
UPS with optional input filtering			■					
UPS without optional input filtering				■				
Welders			■					
X-ray equipment					■	■		

LEED is a registered trademark of the U.S. Green Building Council.

Information provided is subject to change without notice. Please verify all details with GE. All values are design or typical values when measured under laboratory conditions, and GE makes no warranty or guarantee, express or implied, that such performance will be obtained under end-use conditions.

GE  
41 Woodford Avenue  
Plainville, CT 06062  
www.geelectrical.com

© 2010 General Electric Company





## Transformers General Information

### Types QB, QMS, QL, and TransforMore® 600 Volts and Below

The complete family of transformers from GE provide quiet, reliable transformer operation.

All of the dry-type transformers through 1000 KVA are UL listed under the requirements of Standard 506 and 1561. In addition each transformer meets the requirements of NEMA ST-20, 1992. Type QB and QMS models are C-UL listed.

General-purpose transformer are rated 600 volts and below for supplying appliance, lighting and power loads from electrical distribution systems. Standard distribution voltages are 600, 480 and 240 volts; standard load voltages are 480, 240, 208 and 120 volts. The transformer is used to obtain the load voltage from the distribution voltage. Since no vaults are required for installation these transformers can be located right at the load to provide the correct voltage for the application. This eliminates the need for long, costly, low-voltage feeders.

### Construction

#### Types QB and QMS

Core and Coils are contained within a NEMA 3R nonventilated weatherproof enclosure. Type QB and QMS units feature encapsulated core and coils.

#### Type QL

Units are enclosed in a NEMA 2 drip-proof metal enclosure with natural-draft ventilation. Core-and-coil assembly is mounted on rubber isolation pads to reduce noise. Weathershield kits are available for conversion to a NEMA 3R enclosure suitable for outdoor service. **All QL TP-1 model part number begin with 9T8.**

#### TransforMore®

Units utilize fan assisted cooling to achieve reduced size and improved efficiency. These units incorporate an audible alarm and shunt activated disconnect switch for improved safety. Weathershields are available to convert to NEMA 3R enclosure for outdoor service. **All TransforMore® TP-1 model part numbers begin with 9T4.**

### Voltage Tap Arrangement

Transformer taps compensate for high or low line voltages. Standard NEMA, ANSI three-phase taps are two 5 percent taps below normal on transformers smaller than 30 KVA. This arrangement provides a 10 percent range of tap voltage adjustment.

Most standard QL units rated 15 through 500 KVA have available six universal voltage taps-four 2 1/2 percent below normal and two 2 1/2 percent above normal. This arrangement provides a 15 percent range of tap voltage adjustment.

### Temperature Class

Industry standards classify insulation systems in accordance with the rating system shown below.

#### Insulation system classification

Ambient	+ Winding Rise	+ Hot Spot	= Temp. Class
40°C	55°C	10°C	105°C
40°C	80°C	30°C	150°C
40°C	115°C	25°C	180°C
40°C	150°C	30°C	220°C

All standard general-purpose, GE transformers meet all applicable NEMA, ANSI, UL and IEEE standards.

The design life of transformers having different insulation systems is the same, since the allowable temperature rise of an insulation material system is predicated on a specified life for all insulation. The lower temperature systems are designed for the same life as higher temperature systems.

### Sound Levels

All general-purpose transformers are as quiet, or quieter than the 1986 ANSI and NEMA standards for sound levels. Average sound levels are warranted not to exceed the values listed for each load rating shown in the adjacent table. Sound characteristics vary between transformers of identical voltage and KVA rating. The range of variation may be 4 to 8 decibels.

These values apply only to specified test conditions because the characteristic of the installation can cause them to be higher under operating conditions. Where acoustical noise is deemed to be of unusual concern, proper steps should be taken during installation to minimize audible noise transmission.

TransforMore® sound levels are 54 dB when fans are off and operating at less than 50% rated load and 65 dB when fans are operating.

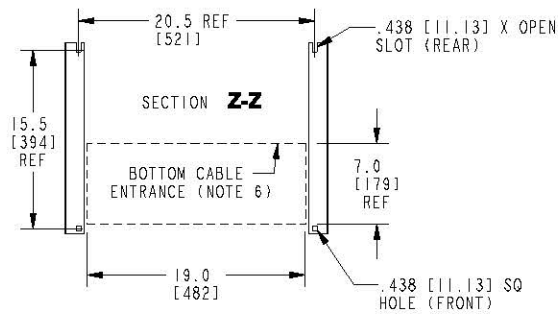
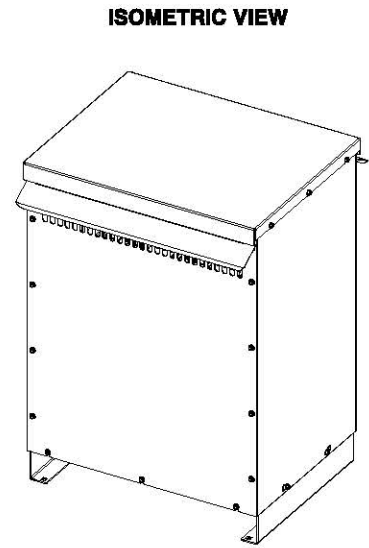
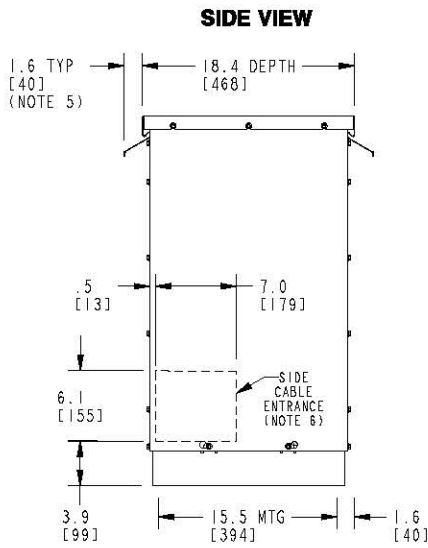
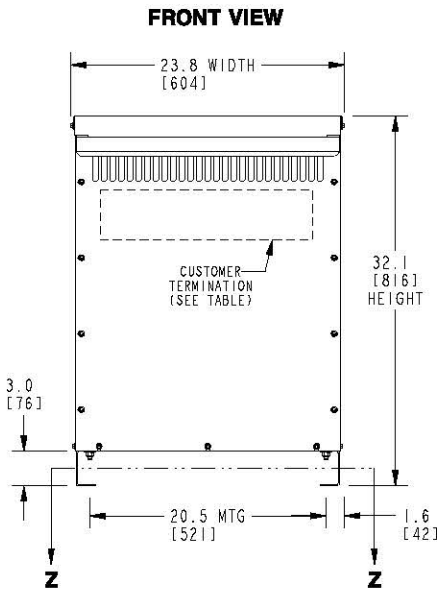
### Sound Levels (Decibels)<sup>1</sup> for 150°C Rise Models

KVA	Sound Levels
0 - 9	40
10 - 50	45
51 - 150	50
151 - 300	55
301 - 500	60

<sup>1</sup>Measure per ANSI C89 2-1986.

### Termination

Improved termination spacing and wiring compartment room gives greater flexibility in selecting various UL listed connectors for either copper or aluminium cable. A listing of suitable connectors is packaged with each GE transformer.



**BOTTOM VIEW OF MOUNTING AND CABLE ENTRANCE**

CUSTOMER TERMINATION			
LOCATION	CONNECTION TYPE	HOLE SIZE	HOLE QTY
PRIMARY BUS BARS	STANDARD BUS BAR (LUGS ARE OPTIONAL)	.41 [10.3] DIA	1 PER BUS BAR
SECONDARY BUS BARS			

**APPROX TOTAL WEIGHT LBS [KG]**

**AL WINDINGS: 334 [151]**  
**CU WINDINGS: 377 [171]**

**kVA RATING: 30**  
**K-FACTOR: K1**  
**PRI VOLTAGE: 480**  
**SEC VOLTAGE: 208Y/120**  
**FREQ (Hz): 60 Hz**  
**TEMP RISE: 150C**  
**WINDING MATL: Copper**  
**ES SHIELD: NO**  
**SOUND LVL (dB): Std (45)**

**NOTES:**

- 1) ALL UNITS ARE UL LISTED AND ARE DESIGNED PER NEMA ST-20 STANDARDS.
- 2) THE TEMPERATURE RISE LISTED WAS DETERMINED WHEN THE TRANSFORMER WAS MOUNTED IN A STANDARD NEMA-2 ENCLOSURE.
- 3) TRANSFORMER IS DESIGNED FOR FLOOR MOUNTING. OPTIONAL WALL MOUNTING BRACKETS ARE AVAILABLE.
- 4) TRANSFORMER IS DRY TYPE, CLASS AA, WITH VENTILATED ENCLOSURE FOR INDOOR USE. OPTIONAL RAINSHIELD KITS ARE AVAILABLE TO ADAPT UNIT FOR TYPE 3R OUTDOOR USE WITHOUT VOIDING THE WARRANTY.
- 5) APPLICABLE WHEN OPTIONAL RAINSHIELDS ARE INSTALLED. RAINSHIELDS ARE SHIPPED IN KITS FOR FIELD INSTALLATION.
- 6) CABLE ENTRANCE IS PERMITTED THROUGH THE LEFT SIDE, RIGHT SIDE AND/OR BOTTOM ENCLOSURE PANELS ONLY. CABLE ENTRANCE IS NOT PERMITTED THROUGH THE FRONT, REAR OR TOP PANELS.
- 7) FOR LIFTING OTHER THAN WITH A FORK TRUCK, REMOVE TOP COVER AND USE 1" [25 MM] DIAMETER HOLES IN THE TOP CORE CLAMPS.
- 8) ENCLOSURE PAINT COLOR IS ANSI #61 GRAY.
- 9) 6" [152 MM] MINIMUM CLEARANCE IS REQUIRED FROM ALL WALLS.

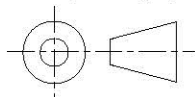
**JOB NAME:**  
 Bossier City South Inland  
**SPEEDI PROP:**  
 S032CD8

UNLESS OTHERWISE SPECIFIED  
 ALL DIMENSIONS ARE INCH [MM]



**GE Energy**

THIRD ANGLE PROJECTION



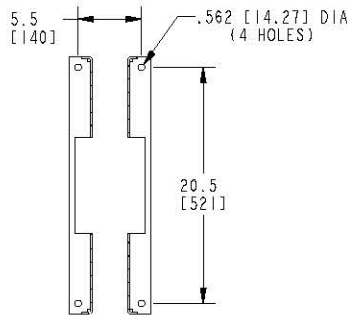
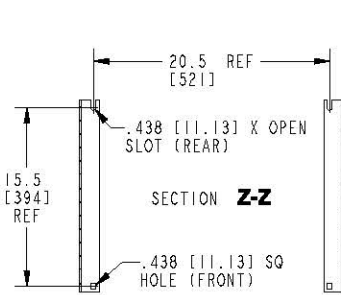
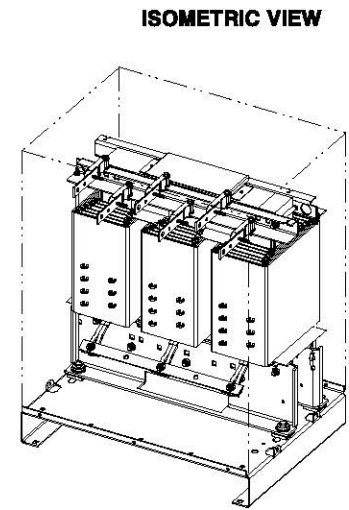
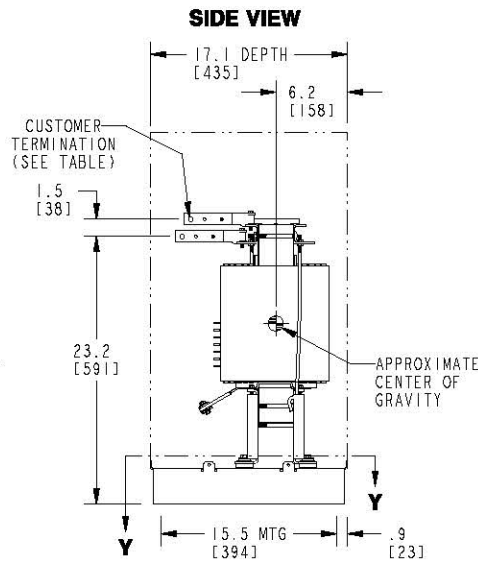
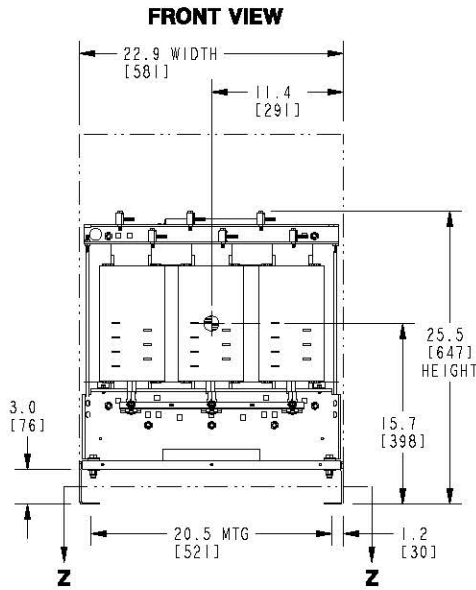
**DRY TYPE TRANSFORMER OUTLINE DRAWING**  
**TYPE QL, 3-PHASE**  
**(ENCLOSED UNIT)**

**CAD DRAWING: 303B401AAP072**

**SHEET 1 OF 2**

**CATALOG # 9T83C9872**

**REV 8**



**BOTTOM VIEW OF MOUNTING HOLE PATTERN**

**BOTTOM VIEW OF MOUNTING HOLE PATTERN WITHOUT BASE ATTACHED**

CUSTOMER TERMINATION			
LOCATION	CONNECTION TYPE	HOLE SIZE	HOLE QTY
PRIMARY BUS BARS	STANDARD BUS BAR (LUGS ARE OPTIONAL)	.41 [10.3] DIA	1 PER BUS BAR
SECONDARY BUS BARS			

**APPROX TOTAL WEIGHT LBS [KG]**  
**AL WINDINGS: 288 [131]**  
**CU WINDINGS: 331 [150]**

**kVA RATING: 30**  
**K-FACTOR: K1**  
**PRI VOLTAGE: 480**  
**SEC VOLTAGE: 208Y/120**  
**FREQ (Hz): 60 Hz**  
**TEMP RISE: 150C**  
**WINDING MATL: Copper**  
**ES SHIELD: NO**  
**SOUND LVL (dB): Std (45)**

**NOTES:**

- 1) ALL UNITS ARE UL LISTED AND ARE DESIGNED PER NEMA ST-20 STANDARDS.
- 2) THE TEMPERATURE RISE LISTED WAS DETERMINED WHEN THE TRANSFORMER WAS MOUNTED IN A STANDARD NEMA-2 ENCLOSURE.
- 3) TRANSFORMER IS DRY TYPE, CLASS AA FOR INDOOR USE.
- 4) FOR LIFTING OTHER THAN WITH A FORK TRUCK, USE 1" [25 MM] DIAMETER HOLES IN THE TOP CORE CLAMPS.
- 5) BASE PAINT COLOR IS ANSI #61 GRAY.
- 6) 6" [152 MM] MINIMUM CLEARANCE IS REQUIRED FROM ALL WALLS.

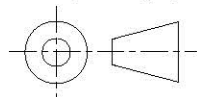
**JOB NAME:**  
 Bossier City South Inland  
**SPEEDI PROP:**  
 S032CD8

UNLESS OTHERWISE SPECIFIED  
 ALL DIMENSIONS ARE INCH [MM]



**GE Energy**

THIRD ANGLE PROJECTION



**DRY TYPE TRANSFORMER OUTLINE DRAWING**  
**TYPE QL, 3-PHASE**  
**(CORE & COIL UNIT)**

**CAD DRAWING: 303B401AAP072**

**SHEET 2 OF 2**

**CATALOG # 9T83C9872**

**REV 8**





# Transformer



\*M0000000\*

Catalog Number

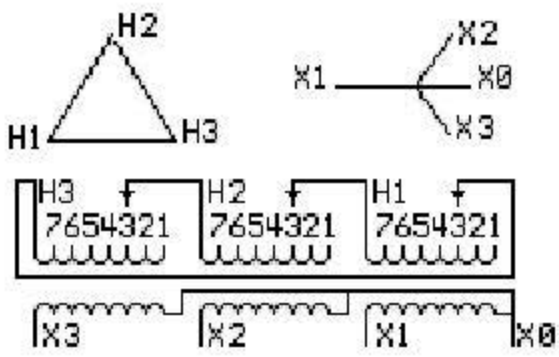
Type QL

9T83C9872

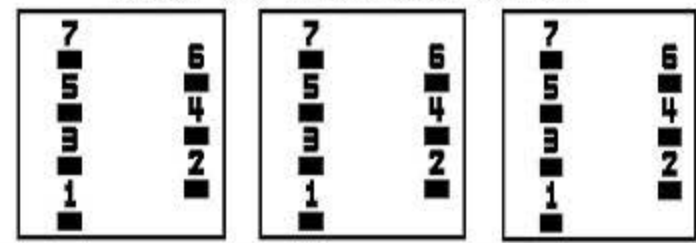
30.0 KVA 60 HZ 3 PH 4.8 % IMP

40 C AMB. 150 C RISE 220 C SYSTEM IS-19C

PRIMARY (H) 480 VOLTS (LINE-LINE)  
SECONDARY (X) 208 VOLTS (LINE-LINE)  
120 VOLTS (LINE-NEUTRAL)



### COIL TAP ARRANGEMENT



### JUMPER CONNECTION

TAP	VOLTS
1	503
2	492
3	480
4	468
5	455
6	443
7	432

NET WGT

327 LB  
148.3 Kg  
9T83C9872  
25816  
Y372C  
NOG  
011613

INSPECTION & FINAL TEST N303!



LISTED 769G

ENCLOSURE TYPE 2 (IP30). RAINPROOF TYPE 3R ENCLOSURE (IP32) WHEN PROVIDED SHIELD 9T18Y4317G05

Assembled in Mexico

BEFORE HANDLING, INSTALLING AND OPERATING, SEE INSTRUCTION 475A667AAP001 Outline: 303B401AAP072

COPPER CONDUCTOR PRIMARY: 10 KV BIL SECONDARY: 10 KV BIL

IN ACCORDANCE WITH NEC SECTION 450-9, ALLOW AT LEAST SIX INCHES CLEARANCE FOR VENTILATION. CHECK ADDITIONAL NEC AND LOCAL CODES.

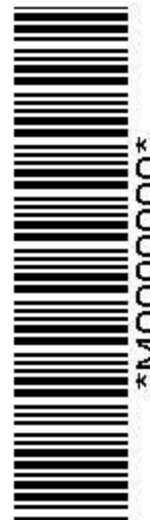
X3 - X2 - X1 - -  
- H3 - H2 - H1

Note: X0 Terminal at the bottom

X3 - X2 - X1 - -  
- H3 - H2 - H1  
X3 - X2 - X1 - -  
- H3 - H2 - H1  
X0



\*M0000000\*



\*M0000000\*