

## Drive Isolation Transformers

The Acme Drive Isolation Transformers are specifically designed to accommodate the special voltages and kVA sizes unique to AC and DC motor drive applications.



## DRIVE ISOLATION TRANSFORMERS

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### Why use a Drive Isolation Transformer?

Motor drives are popular because they are easy to control and help save energy. The basic motor drive uses a rectifier, made up of diode bridges or silicon controlled rectifiers (SCR), to convert AC to DC. In three-phase circuits, there is a brief moment when more than one SCR is on at the same time creating a momentary short. This short puts stress on the upstream transformer and causes a distorted voltage waveform, which can have a damaging effect on the transformer itself and electrical equipment connected to the circuit.

### What is a Drive Isolation Transformer?

The Acme Drive Isolation Transformers are specifically designed to handle the mechanical stresses, voltage distortions, and harmonics associated with AC and DC variable speed drives.

Acme's Drive Isolation Transformers maximize the power quality benefits gained from standard isolation transformers by:

- Preventing overheating due to harmonics
- Limiting harmonic peaks
- Increasing the ground fault tolerance of connected variable frequency drives
- Minimizing the transfer of inverter switching noise

## ACME ADVANTAGE

### Wound Cores and Strip Winding mean lower losses

All Acme DITs above 7.5 kVA are wound with strip windings to ensure the lowest possible eddy current losses. All our DITs 440 kVA and larger use stacked core. This superior design has very low losses and quiet operation. Both of these features combine to significantly reduce losses and operating costs compared to other types of constructions.

### Copper terminations provide trouble-free operation

All Acme DITs up to and including 220 kVA have copper terminations. The transition from aluminum strip coil conductors to copper terminations is accomplished by a bonding process known as "Koldwelding™". This process has been used by Acme for over 25 years to provide a trouble-free, permanent bonding of the two metals.

### Stress relief

Acme uses strip conductors (above 7.5 kVA) instead of wire for a DIT series that easily accommodates the severe electrical and mechanical stresses found in today's AC & DC motor drives. The inherent excellent line isolation of these transformers is further enhanced with the extra protection of Acme's Electrostatic Shield — free in all DIT's.

### Lower losses

The harmonic currents generated by AC & DC drives increase eddy current losses (heat) in transformer windings. The thicker the winding conductor, the greater the losses. Acme uses one turn per layer of thin strip conductor which provides lower eddy current losses than comparable wire wound units. Lower losses = cooler operation and longer transformer life.

### Reduced short circuit forces

Strip windings minimize axial short circuit forces that can cause mechanical displacement of the windings under fault conditions. For extra protection all designs 7.5 kVA and above use primary and secondary coils of equal axial length. This feature tends to negate axial short circuit forces, further improving transformer life expectancy.

H.P.	kVA
5.0	7.5
7.5	11.0
10.0	14.0
15.0	20.0
20.0	27.0
25.0	34.0
30.0	40.0
40.0	51.0
50.0	63.0
60.0	75.0
75.0	93.0
100.0	118.0
125.0	145.0
150.0	175.0
200.0	220.0
250.0	275.0
300.0	330.0
400.0	440.0
500.0	550.0
600.0	660.0

## Features

- UL Type 3R Enclosures with Weather Shield on Ventilated Units (above 20 kVA). Type 2 Enclosure without weather shield. UL Listed and CSA certified. 7.5–20.0 kVA are encapsulated, UL 3R.
- 3-Phase 60 Hertz.
- 180°C and 220°C insulation systems.
- Encapsulated and ventilated designs. All ventilated units, are of strip wound construction. Acme's reinforced core assemblies enhance quiet operation.
- Nominally 6% impedance.
- Designed for use with AC, adjustable frequency or DC drives.
- Full capacity taps are featured on all units. On 7.5 through 20 kVA units, taps are 1-5% ANFC and 1-5% BNFC. On 27 through 880 kVA units, taps are 2-2 1/2% ANFC and 2-2 1/2% BNFC.
- Full range of kVA ratings cover all standard drive systems.
- Ample wiring compartment for easy cable entry.
- Optional wall mounting brackets for certain sizes.



kVA	Primary 230V Delta Secondary 230Y/133 Catalog Number	Height <sup>③</sup> (Inches)(Cm.)	Width <sup>③</sup> (Inches)(Cm.)	Depth <sup>③</sup> (Inches)(Cm.)	Weight (Lbs.)(Kg.)	Mounting Type (Wall)(Floor)	Weather Shield	Dimension Drawing	
7.5	DTFA72S	(62)	15.21 (38.6)	19.25 (48.9)	7.37 (18.7)	180 (81.6)	W	NA	F
11.0	DTFA0112S	↓	18.86 (48.0)	20.30 (51.6)	9.03 (22.9)	265 (120.0)	F ①	NA	I
14.0	DTFA0142S		18.86 (48.0)	20.30 (51.6)	9.03 (22.9)	265 (120.0)	F ①	NA	I
20.0	DTFA0202S		20.77 (52.8)	20.94 (53.2)	10.18 (25.9)	435 (197.0)	F ①	NA	I
27.0	DTFA0274S		(59)	25.48 (64.8)	24.39 (62.0)	19.40 (49.3)	302 (137.0)	F ②	WSA1
34.0	DTFA0344S	↓	25.48 (64.8)	24.39 (62.0)	19.40 (49.3)	330 (150.0)	F ②	WSA1	E
40.0	DTFA0404S		25.48 (64.8)	24.39 (62.0)	19.40 (49.3)	370 (168.0)	F ②	WSA1	E
51.0	DTFA0514S		29.40 (74.7)	28.15 (71.5)	22.40 (56.9)	375 (170.0)	F ②	WSA2	E
63.0	DTFA0634S		29.40 (74.7)	28.15 (71.5)	22.40 (56.9)	495 (225.0)	F ②	WSA2	E
75.0	DTFA0754S		29.40 (74.7)	28.15 (71.5)	22.40 (56.9)	525 (238.0)	F ②	WSA2	E
93.0	DTFA0934S		35.40 (89.9)	31.90 (81.0)	26.90 (68.3)	685 (311.0)	F	WSA3	E
118.0	DTFA01184S		35.40 (89.9)	31.90 (81.0)	26.90 (68.3)	710 (322.0)	F	WSA3	E
145.0	DTFA01454S		41.52 (105.5)	32.90 (83.6)	29.90 (75.9)	980 (445.0)	F	WSA4	E
175.0	DTFA01754S		41.52 (105.5)	32.90 (83.6)	29.90 (75.9)	1110 (504.0)	F	WSA4	E
220.0	DTFA02204S		41.52 (105.5)	32.90 (83.6)	29.90 (75.9)	1120 (508.0)	F	WSA4	E

① Optional wall mounting kits – part # PL 79911

② Optional wall mounting kits – part # PL 79912

The number in ( )'s following the catalog number is the electrical wiring diagram number.



kVA	Primary 460V Delta Secondary 230Y/133 Catalog Number		Primary 460V Delta Secondary 460Y/266 Catalog Number		Height <sup>③</sup> (Inches)(Cm.)	Width <sup>③</sup> (Inches)(Cm.)	Depth <sup>③</sup> (Inches)(Cm.)	Weight (Lbs.)(Kg.)	Mounting Type (Wall)(Floor)	Weather Shield	Dimension Drawing
7.5	DTGA72S	(37)	DTGB72S	(34)	15.21 (38.6)	19.25 (48.9)	7.37 (18.7)	180 (81.6)	W	NA	F
11.0	DTGA0112S		DTGB0112S		18.86 (47.9)	20.30 (51.6)	9.03 (22.9)	265 (120.0)	F ①	NA	I
14.0	DTGA0142S		DTGB0142S		18.86 (47.9)	20.30 (51.6)	9.03 (22.9)	270 (123.0)	F ①	NA	I
20.0	DTGA0202S		DTGB0202S		20.77 (52.8)	20.94 (53.2)	10.18 (25.9)	435 (197.0)	F ①	NA	I
27.0	DTGA0274S	(38)	DTGB0274S	(35)	25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	320 (145.0)	F ②	WSA1	E
34.0	DTGA0344S		DTGB0344S		25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	340 (154.0)	F ②	WSA1	E
40.0	DTGA0404S		DTGB0404S		25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	395 (179.0)	F ②	WSA1	E
51.0	DTGA0514S		DTGB0514S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	400 (181.0)	F ②	WSA2	E
63.0	DTGA0634S		DTGB0634S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	550 (250.0)	F ②	WSA2	E
75.0	DTGA0754S		DTGB0754S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	570 (259.0)	F ②	WSA2	E
93.0	DTGA0934S		DTGB0934S		35.90 (91.2)	31.90 (81.0)	26.88 (68.3)	685 (311.0)	F	WSA3	E
118.0	DTGA01184S		DTGB01184S		35.90 (91.2)	31.90 (81.0)	26.88 (68.3)	765 (347.0)	F	WSA3	E
145.0	DTGA01454S		DTGB01454S		41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	990 (449.0)	F	WSA4	E
175.0	DTGA01754S		DTGB01754S		41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	1100 (499.0)	F	WSA4	E
220.0	DTGA02204S		DTGB02204S		41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	1120 (508.0)	F	WSA4	E
275.0	DTGA002754S		DTGB002754S		45.60 (115.8)	39.50 (100.3)	35.50 (90.2)	2090 (948.0)	F	WSA5	E
330.0	DTGA03304S		DTGB03304S		45.60 (115.8)	39.50 (100.3)	35.50 (90.2)	2090 (948.0)	F	WSA5	G
440.0			DTGB04404S		57.84 (146.9)	45.50 (115.6)	41.49 (105.4)	2295 (1043.2)	F	WSA7	G
550.0			DTGB05504S		57.84 (146.9)	45.50 (115.6)	41.49 (105.4)	2580 (1172.7)	F	WSA7	G
660.0			DTGB06604S		62.84 (159.6)	54.00 (137.2)	41.49 (105.4)	3700 (1678.3)	F	WSA6	G
770.0			DTGB07704S		62.84 (159.6)	54.00 (137.2)	41.49 (105.4)	4044 (1838.2)	F	WSA6	G
880.0			DTGB008804S		62.84 (159.6)	54.00 (137.2)	41.49 (105.4)	4230 (1922.7)	F	WSA6	G
990.0			DTGB9902S		62.84 (159.6)	54.00 (137.2)	41.49 (105.4)	4285 (1947.7)	F	WSA6	G

① Optional wall mounting kits-part # PL79911

② Optional wall mounting kits-part # PL79912

The number in ( )'s following the catalog number is the electrical wiring diagram number.

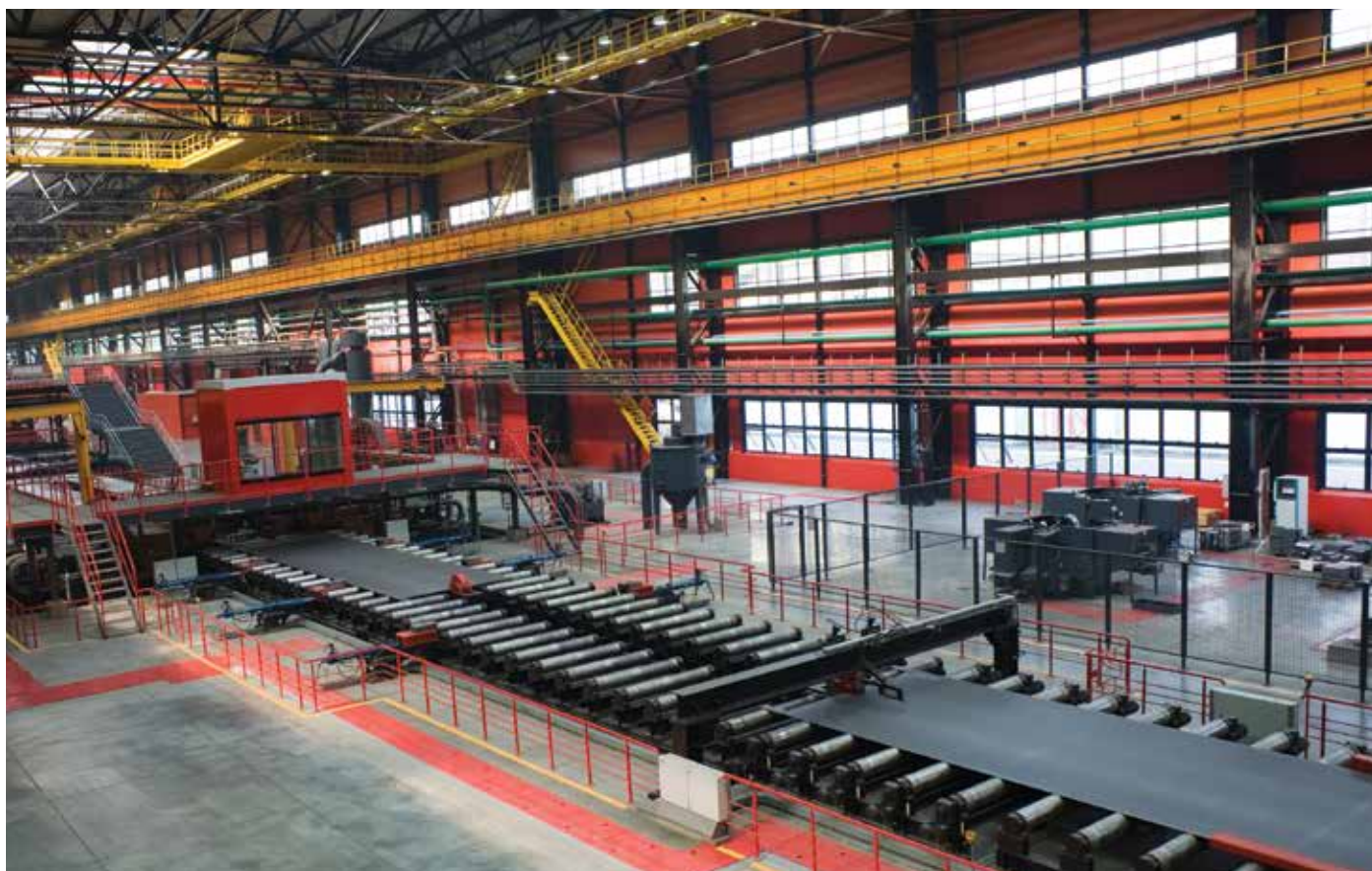


kVA	Primary 575V Delta Secondary 230Y/133		Primary 575V Delta Secondary 460Y/266		Height <sup>③</sup> (Inches)(Cm.)	Width <sup>③</sup> (Inches)(Cm.)	Depth <sup>③</sup> (Inches)(Cm.)	Weight (Lbs.)(Kg.)	Mounting Type (Wall)(Floor)	Weather Shield	Dimension Drawing		
	Catalog Number	Catalog Number	Catalog Number	Catalog Number									
7.5	DTHA72S	(40)	DTHB72S	(43)	15.21 (38.6)	19.25 (48.9)	7.37 (18.7)	180 (81.6)	W	NA	F		
11.0	DTHA0112S	↓	DTHB0112S	↓	18.86 (47.9)	20.30 (51.6)	9.03 (22.9)	265 (120.0)	F ①	NA	I		
14.0	DTHA0142S		DTHB0142S		18.86 (47.9)	20.30 (51.6)	9.03 (22.9)	270 (123.0)	F ①	NA	I		
20.0	DTHA0202S		DTHB0202S		20.77 (52.8)	20.94 (53.2)	10.18 (25.9)	435 (197.0)	F ①	NA	I		
27.0	DTHA0274S		(41)		DTHB0274S	(44)	25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	320 (145.0)	F ②	WSA1	E
34.0	DTHA0344S		DTHB0344S		25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	340 (154.0)	F ②	WSA1	E		
40.0	DTHA0404S		DTHB0404S		25.50 (64.8)	24.39 (61.9)	19.37 (49.2)	395 (179.0)	F ②	WSA1	E		
51.0	DTHA0514S		DTHB0514S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	400 (181.0)	F ②	WSA2	E		
63.0	DTHA0634S		DTHB0634S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	550 (250.0)	F ②	WSA2	E		
75.0	DTHA0754S		DTHB754S		29.90 (75.9)	28.15 (71.5)	22.37 (56.8)	570 (259.0)	F ②	WSA2	E		
93.0	DTHA0934S		DTHB0934S		35.90 (91.2)	31.90 (81.0)	26.88 (68.3)	685 (311.0)	F	WSA3	E		
118.0	DTHA01184S	DTHB01184S	35.90 (91.2)	31.90 (81.0)	26.88 (68.3)	765 (347.0)	F	WSA3	E				
145.0	DTHA01454S	↓	DTHB01454S	↓	41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	990 (449.0)	F	WSA4	E		
175.0		DTHB01754S	41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	1100 (499.0)	F	WSA4	E				
220.0		DTHB02204S	41.52 (105.5)	32.90 (83.6)	29.88 (75.9)	1120 (508.0)	F	WSA4	E				
275.0		DTHB002754S	45.60 (115.8)	39.50 (100.3)	35.50 (90.2)	2090 (948.0)	F	WSA5	E				
330.0		DTHB03304S	45.60 (115.8)	39.50 (100.3)	35.50 (90.2)	2090 (948.0)	F	WSA5	G				
440.0		DTHB04404S	57.84 (157.5)	45.50 (115.6)	41.49 (105.4)	2580 (1172.7)	F	WSA7	G				
550.0		DTHB05504S	57.84 (157.5)	45.50 (115.6)	41.49 (105.4)	2640 (1200.0)	F	WSA7	G				
660.0		DTHB006604S	↓	62.84 (159.6)	54.00 (137.2)	41.49 (105.4)	3700 (1678.3)	F	WSA6	G			

① Optional wall mounting kits-part # PL79911

② Optional wall mounting kits-part # PL79912

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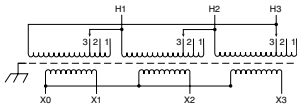
## Windings, Terminals and Construction

kVA	Primary Winding	Secondary Winding	Insulation System	Termination	Enclosure	Construction	Core
7.5	CU wire	CU wire	180°C	CU wire	Epoxy encapsulated		Wound/distributed gap
11-20	AL foil	AL foil	180°C	CU wire	Epoxy encapsulated		Wound/distributed gap
27-220	AL foil	AL foil	220°C	CU bus	Ventilated		Wound/distributed gap
275-330	AL foil	AL foil	220°C	AL bus	Ventilated		Wound/distributed gap
440-770	AL foil	AL foil	220°C	AL bus	Ventilated		Butt stacked/Step lap



## WIRING DIAGRAMS

**34** PRIMARY: 460 Volts Delta  
SECONDARY: 460Y/266 Volts  
TAPS: 1-5% ANFC and BNFC

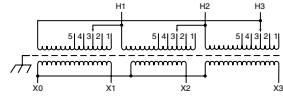


Primary Volts	%	Connect Leads to Tap No.
483	105	1
460	100	2
437	95	3

Secondary Volts		
460		X1, X2, X3
266		X1 & X0 X2 & X0 X3 & X0
1 phase		

**35** PRIMARY: 460 Volts Delta  
SECONDARY: 460Y/266 Volts  
TAPS: 2-2 1/2% ANFC and BNFC

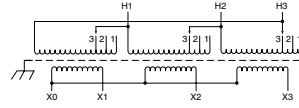


Primary Volts	%	Connect Leads to Tap No.
483	105	1
472	102.5	2
460	100	3
449	97.5	4
437	95	5

Secondary Volts		
460		X1, X2, X3
266		X1 & X0 X2 & X0 X3 & X0
1 phase		

**37** PRIMARY: 460 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 1-5% ANFC and BNFC

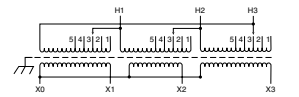


Primary Volts	%	Connect Leads to Tap No.
483	105	1
460	100	2
437	95	3

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

**38** PRIMARY: 460 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 2-2 1/2% ANFC and BNFC

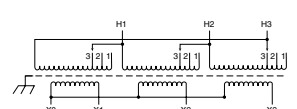


Primary Volts	%	Connect Leads to Tap No.
483	105	1
472	102.5	2
460	100	3
449	97.5	4
437	95	5

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

**40** PRIMARY: 575 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 1-5% ANFC and BNFC

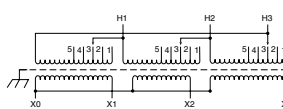


Primary Volts	%	Connect Leads to Tap No.
604	105	1
575	100	2
546	95	3

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

**41** PRIMARY: 575 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 2-2 1/2% ANFC and BNFC

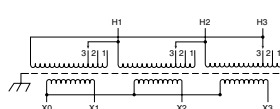


Primary Volts	%	Connect Leads to Tap No.
604	105	1
589	102.5	2
575	100	3
561	97.5	4
546	95	5

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

**43** PRIMARY: 575 Volts Delta  
SECONDARY: 460Y/266 Volts  
TAPS: 1-5% ANFC and BNFC

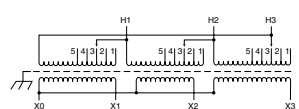


Primary Volts	%	Connect Leads to Tap No.
604	105	1
575	100	2
546	95	3

Secondary Volts		
460		X1, X2, X3
266		X1 & X0 X2 & X0 X3 & X0
1 phase		

**44** PRIMARY: 575 Volts Delta  
SECONDARY: 460Y/266 Volts  
TAPS: 2-2 1/2% ANFC and BNFC

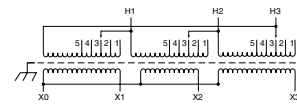


Primary Volts	%	Connect Leads to Tap No.
604	105	1
589	102.5	2
575	100	3
561	97.5	4
546	95	5

Secondary Volts		
460		X1, X2, X3
266		X1 & X0 X2 & X0 X3 & X0
1 phase		

**59** PRIMARY: 230 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 2-2 1/2% ANFC and 2-2 1/2% BNFC

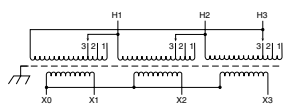


Primary Volts	%	Connect Leads to Tap No.
242	105	1
236	102.5	2
230	100	3
224	97.5	4
219	95	5

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

**62** PRIMARY: 230 Volts Delta  
SECONDARY: 230Y/133 Volts  
TAPS: 1-5% ANFC and 1-5% BNFC

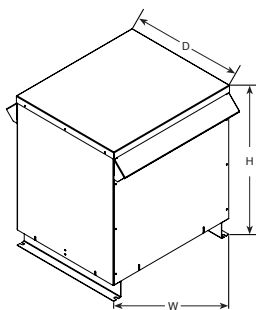


Primary Volts	%	Connect Leads to Tap No.
241	105	1
230	100	2
218	95	3

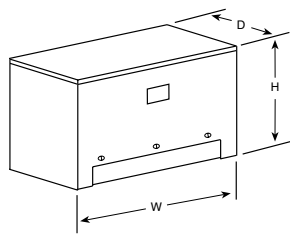
  

Secondary Volts		
230		X1, X2, X3
133		X1 & X0 X2 & X0 X3 & X0
1 phase		

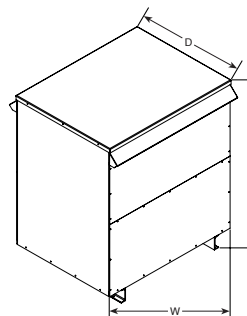
## DIMENSION DRAWING



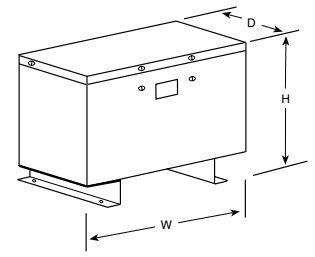
Design E



Design F



Design G



Design I



N85 W12545 Westbrook Crossing  
Menomonee Falls, WI 53051  
800.334.5214

[hubbell-acmeelectric.com](http://hubbell-acmeelectric.com)



Hubbell Canada Inc.  
905-839-1138

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