

## Automation Transformers - Non-Ventilated 50 VA to 45 kVA

SolaHD encapsulated transformers are rated for Hazardous Locations as well as harsh industrial environments. Encapsulation and rugged UL Listed/NEMA Type 3R enclosures protect the transformer from dust, moisture, and provide extra shock and vibration resistance. SolaHD transformers fully comply with the latest addition of the National Electrical Code for Class I, Division 2, Group A, B, C and D locations when installed in compliance with NEC 501.100 (B).

### Features

#### Single Phase: .05 – .250 kVA

- UL Listed/NEMA Type 3R non encapsulated enclosure for indoor and outdoor service
- Low temperature rise, UL Class 130°C insulation system, 80°C temperature rise under full load
- Conduit knockouts for side entry into wiring compartment
- Copper lead wire terminations

#### Single Phase: 0.500 – 25 kVA


#### Three Phase: 3 – 45 kVA

- UL Listed/NEMA Type 3R encapsulated enclosure for indoor and outdoor service
- Electrostatically shielded for quality power on sizes 1 kVA and larger
- UL Class 200°C insulation system, 115°C temperature rise under full load
- Conduit knockouts for side entry into wiring compartment
- Copper lead wire terminations
- .500 - 45 kVA units are encapsulated with electrical grade silica and epoxy for industrial applications

### Related Products

- Some SolaHD DC power supplies are available with Class I, Division 2 ratings or encapsulation.
- Surge Protective Devices

### Certifications and Compliances

-  Listed: E25872, E77014
  - UL 1561 or UL 506
  - CSA C22.2 No. 47 or No. 66



### Accessories and Optional Design Styles

- Stainless Steel Enclosures
- Copper Wound designs
- UL Listed/NEMA Type 4, 4X or 12 Encapsulated Enclosures
- Low temperature designs available

Note: Weights and dimensions may change and should not be used for construction purposes.

## Selection Table: Single Phase

### Group 1: 240 x 480 Primary, 120/240 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
<b>Non-Encapsulated</b>										
.050	<b>HS1B50</b>	<b>N/A</b>	6.00 (152.4)	4.00 (101.6)	3.00 (76.2)	3.00 (1.36)	2	15	.208/.104	0.416/0.208
.075	<b>HS1B75</b>		6.00 (152.4)	4.00 (101.6)	3.00 (76.2)	3.00 (1.36)	2	15	.312/.156	0.625/0.312
.100	<b>HS1B100</b>		6.00 (152.4)	4.00 (101.6)	3.00 (76.2)	4.00 (1.81)	2	15	.417/.208	0.833/0.417
.150	<b>HS1B150</b>		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	5.00 (2.27)	2	15	.625/.313	1.25/.625
.250	<b>HS1B250</b>		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	8.00 (3.63)	2	15	1.04/.512	2.08/1.04
<b>Encapsulated</b>										
0.5	<b>HS1F500B</b>	<b>HSS1F500B</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	22.0 (9.98)	3	15	2.08/1.04	4.16/2.08
0.75	<b>HS1F750B</b>	<b>HSS1F750B</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	27.0 (12.25)	3	15	3.13/1.56	6.25/3.13
1	<b>HS1F1BS</b>	<b>HSS1F1BS</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	28.0 (12.70)	3	16	4.17/2.08	8.33/4.17
1.5	<b>HS1F1.5AS</b>	<b>HSS1F1.5AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	38.0 (17.24)	4	16	6.25/3.13	12.5/6.25
2	<b>HS1F2AS</b>	<b>HSS1F2AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	45.0 (20.42)	4	16	8.33/4.17	16.7/8.33
3	<b>HS5F3AS</b>	<b>HSS5F3AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	55.0 (24.95)	4	17	12.5/6.25	25.0/12.5
5	<b>HS5F5AS</b>	<b>HSS5F5AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	131.0 (59.42)	4	17	20.8/10.4	41.6/20.8
7.5	<b>HS5F7.5AS</b>	<b>HSS5F7.5AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	156.0 (70.76)	4	18	31.3/15.6	62.5/31.3
10	<b>HS5F10AS</b>	<b>HSS5F10AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	156.0 (70.76)	4	18	41.7/20.8	83.3/41.7
15	<b>HS5F15AS</b>	<b>HSS5F15AS</b>	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	549.0 (249.02)	4	18	62.5/31.2	125.0/62.5
25	<b>HS5F25AS</b>	<b>HSS5F25AS</b>	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	637.0 (288.94)	4	18	104.0/52.0	208.0/104.0

### Group 2: 600 Volt Primary, 120/240 Secondary, 60 Hz

kVA	Catalog Number Group 1 Rolled Steel	Catalog Number Group 2 Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
<b>Non-Encapsulated</b>										
.100	<b>HS10B100</b>	<b>N/A</b>	6.00 (152.4)	4.00 (101.6)	3.00 (76.2)	4.00 (1.81)	2	21	0.167	.833/.417
.150	<b>HS10B150</b>		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	5.00 (2.27)	2	21	0.25	1.25/.625
.250	<b>HS10B250</b>		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	8.00 (3.63)	2	21	0.417	2.08/1.04
<b>Encapsulated</b>										
.500	<b>HS10F500B</b>	<b>HSS10F500B</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	22.0 (9.98)	3	21	0.833	4.16/2.08
.750	<b>HS10F750B</b>	<b>HSS10F750B</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	23.0 (10.43)	3	21	1.25	6.25/3.13
1	<b>HS10F1BS</b>	<b>HSS10F1BS</b>	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	28.0 (12.70)	3	21	1.67	8.33/4.17
1.5	<b>HS10F1.5AS</b>	<b>HSS10F1.5AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	38.0 (17.24)	4	21	2.5	12.5/6.25
2	<b>HS10F2AS</b>	<b>HSS10F2AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	60.0 (27.22)	4	21	3.33	16.7/8.33
3	<b>HS10F3AS</b>	<b>HSS10F3AS</b>	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	66.0 (29.94)	4	22	5.0	25.0/12.5
5	<b>HS10F5AS</b>	<b>HSS10F5AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	100.0 (45.36)	4	22	8.3	41.6/20.8
7.5	<b>HS10F7.5AS</b>	<b>HSS10F7.5AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	135.0 (61.23)	4	22	12.5	62.5/31.3
10	<b>HS10F10AS</b>	<b>HSS10F10AS</b>	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	150.0 (68.04)	4	22	16.7	83.3/41.7

\* Note: Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.

## Selection Table: Single Phase

## Group 3: 120/208/240/277 Volt Primary, 120/240 Secondary, 60 Hz

kVA	Catalog Number Group 1 Rolled Steel	Catalog Number Group 2 Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps @ 277 V	Secondary Amps
<b>Encapsulated</b>										
1	HS12F1BS	HSS12F1BS	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	29.0 (13.15)	3	19	3.6	8.33/4.17
1.5	HS12F1.5AS	HSS12F1.5AS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	40.0 (18.14)	4	20	5.4	12.5/6.25
2	HS12F2AS	HSS12F2AS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	60.0 (27.22)	4	20	7.2	16.7/8.33
3	HS12F3AS	HSS12F3AS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	66.0 (29.94)	4	20	10.8	25.0/12.5
5	HS12F5AS	HSS12F5AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	104.0 (47.17)	4	20	18.0	41.6/20.8
7.5	HS12F7.5AS	HSS12F7.5AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	135.0 (61.23)	4	20	27.1	62.5/31.3
10	HS12F10AS	HSS12F10AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	156.0 (70.76)	4	20	36.1	83.3/41.7

Group 4: Export 190/200/208/220/380/400/415/440 Volt Primary, 110/220 Secondary, 50/60 Hz Copper wound  
 Export 200/208/230/400/415/460 Volt Primary, 115/230 Secondary, 50/60 Hz Copper wound  
 Export 208/240/415/480 Volt Primary, 120/240 Secondary, 60 Hz only Copper wound

kVA	Catalog Number Group 1 Rolled Steel	Catalog Number Group 2 Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps <sup>2</sup>	Secondary Amps
<b>Encapsulated, Copper Wound</b>										
1	HS14F1BS	HSS14F1BS	10.00 (254.0)	6.00 (152.4)	5.00 (127.0)	34.0 (15.42)	3	23	4.5/2.3	9.1/4.5
1.5	HS14F1.5BS	HSS14F1.5BS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	40.0 (18.13)	4	24	6.8/3.4	13.6/6.8
2	HS14F2BS	HSS14F2BS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	60.0 (27.21)	4	24	9.1/4.5	18.2/9.1
3	HS14F3BS	HSS14F3BS	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	73.0 (33.11)	4	24	13.6/6.8	27.3/13.6
5	HS14F5BS	HSS14F5BS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	100.0 (45.36)	4	24	22.7/11.4	45.5/22.7
7.5	HS14F7.5BS	HSS14F7.5BS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	140.0 (63.50)	4	24	34.1/17.0	68.2/34.1
10	HS14F10BS	HSS14F10BS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	175.0 (79.38)	4	24	45.5/22.7	90.9/45.5

## Notes:

- Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.
- Amperage calculated at 220/440 Volts on primary. UL Listed and CSA Certified. 240 & 480 V not available at 50 Hz.

## Selection Tables: Three Phase

### Group A: 480 Volt $\Delta$ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps	Secondary Amps
3	HT1F3AS	HTS1F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	105.0 (47.63)	4	27	3.6	8.3
6	HT1F6AS	HTS1F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	110.0 (49.90)	4	27	7.2	16.6
9	HT1F9AS	HTS1F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	250.0 (113.40)	4	27	10.8	25.0
15	HT1F15AS	HTS1F15AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	261.0 (118.39)	4	27	18.1	41.7
30	HT1F30AS	HTS1F30AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	696.0 (315.70)	4	27	36.1	83.4
45	HT1F45AS	HTS1F45AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	844.0 (382.83)	4	27	54.2	125.0

### Group B: 208 Volt $\Delta$ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps	Secondary Amps
3	HT3F3AS	HTS3F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	26	7.2	8.3
6	HT3F6AS	HTS3F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	141.0 (63.96)	4	26	14.4	16.6
9	HT3F9AS	HTS3F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	26	21.7	25.0

### Group C: 480 Volt $\Delta$ Primary, 240 Volt $\Delta$ 120 Secondary with reduced capacity center tap, 60 Hz <sup>2</sup>

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps	Secondary Amps
3	HT5F3AS	HTS5F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	105.0 (47.63)	4	28	3.6	7.2
6	HT5F6AS	HTS5F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	110.0 (49.90)	4	28	7.2	14.4
9	HT5F9AS	HTS5F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	250.0 (113.40)	4	28	10.8	21.7
15	HT5F15AS	HTS5F15AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	305.0 (138.35)	4	28	18.1	36.1
30	HT5F30AS	HTS5F30AS	29.00 (736.6)	25.00 (635.0)	12.00 (304.8)	698.0 (316.61)	4	28	36.1	72.2
45	HT5F45AS	HTS5F45AS	29.00 (736.6)	25.00 (635.0)	12.00 (304.8)	876.0 (397.35)	4	28	54.2	108.3

### Group D: 240 Volt $\Delta$ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style <sup>1</sup>	Elec Conn <sup>1</sup>	Primary Amps	Secondary Amps
3	HT6F3AS	HTS6F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	25	7.2	8.3
6	HT6F6AS	HTS6F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	141.0 (63.96)	4	25	14.4	16.6
9	HT6F9AS	HTS6F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	25	21.7	25.0

#### Notes:

- Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.
- Refer to *Capacity of Center Tap in Center Tap Delta Transformers* at the beginning of this section.

## Selection Tables: Three Phase

Group E: 480 Volt  $\Delta$  Primary, 380Y/220 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
3	HT79F3AS	HTS79F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	121.0 (54.88)	4	29	3.6	4.6
6	HT79F6AS	HTS79F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	141.0 (63.96)	4	29	7.2	9.1
9	HT79F9AS	HTS79F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	255.0 (115.7)	4	29	10.8	13.6

Group F: 600 Volt  $\Delta$  Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
3	HT7F3AS	HTS7F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	116.0 (52.62)	4	30	2.9	8.3
6	HT7F6AS	HTS7F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	145.0 (65.77)	4	30	5.8	16.6
9	HT7F9AS	HTS7F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	225.0 (115.67)	4	30	8.7	25.0

Group G: 208 Volt  $\Delta$  Primary, 480Y/277 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Ship Weight Approx. (lbs)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
3	HT84F3AS	HTS84F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	31	8.3	3.6
6	HT84F6AS	HTS84F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	141.0 (63.96)	4	31	16.6	7.2
9	HT84F9AS	HTS84F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	31	25.0	10.8

Group H: 240 Volt  $\Delta$  Primary, 480Y/277 Secondary, 60 Hz

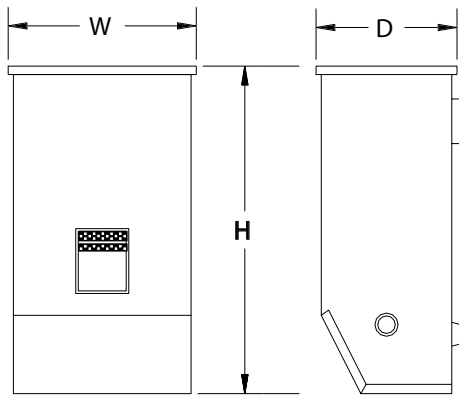
kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height in (mm)	Width in (mm)	Depth in (mm)	Ship Weight Approx. (lbs)	Design Style *	Elec Conn *	Primary Amps	Secondary Amps
3	HT85F3AS	HTS85F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	32	7.2	3.6
6	HT85F6AS	HTS85F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	141.0 (63.96)	4	32	14.4	7.2
9	HT85F9AS	HTS85F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	32	21.6	10.8

\* Notes: Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.

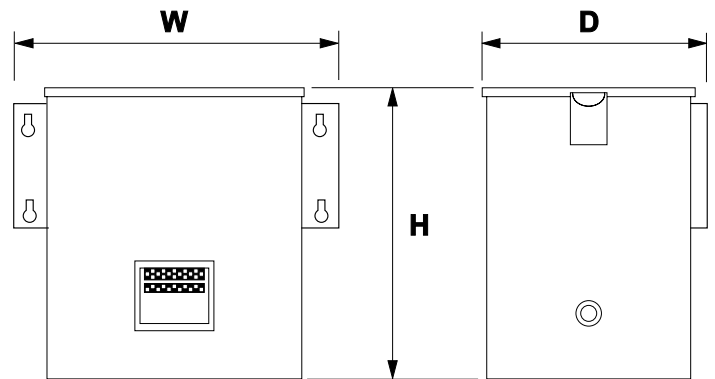
Design Styles



Style 2 - Non-Encapsulated



Style 3 - Encapsulated



Style 4 - Encapsulated

Customized Enclosures - Contact Technical Services



Style 5 - Encapsulated

Available for all encapsulated kVA sizes (For Type 4, 12 and 4X)

### Electrical Connections (Single Phase)

240 X 480 Volt Primary  
120/240 Volt Secondary  
Taps: None

**15**

Primary Voltage	Interconnect	Connect Lines to
480	H2 to H3	H1 & H4
240	H1 to H3 H2 to H4	H1 & H4
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS1 Series**

240 X 480 Volt Primary,  
120/240 Volt Secondary  
Taps: 2, 2½% FCAN; 4, 2½% FCBN

**18**

Primary Voltage	Interconnect	Connect Lines to
504	H5 to H6	H1 & H10
492	H4 to H6	H1 & H10
480	H4 to H7	H1 & H10
468	H3 to H7	H1 & H10
456	H3 to H8	H1 & H10
444	H2 to H8	H1 & H10
432	H2 to H9	H1 & H10
Secondary Voltage	Interconnect	Connect Lines to
252	H1 to H6 H5 to H10	H1 & H10
240	H1 to H7 H4 to H10	H1 & H10
228	H1 to H8 H3 to H10	H1 & H10
216	H1 to H9 H2 to H10	H1 & H10
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS5 Series**

240 X 480 Volt Primary  
120/240 Volt Secondary  
Taps: None

**16**

Primary Voltage	Interconnect	Connect Lines to
480	H2 to H3	H1 & H4
240	H1 to H3 H2 to H4	H1 & H4
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS1 Series**

120/208/240/277 Volt Primary  
120/240 Volt Secondary  
Taps: None

**19**

Primary Voltage	Interconnect	Connect Lines to
277	H2 to H3	H1 & H6
240	H2 to H3	H1 & H5
208	H2 to H3	H1 & H4
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS12 Series (1 kVA only)**

$\perp$  = Earth Ground

Note:

Connect the electrostatic shield to the equipment ground (green) or to both the equipment ground and the system ground (white). Specifications are subject to change without notice.

240 X 480 Volt Primary  
120/240 Volt Secondary  
Taps: 2, 2½% FCAN & FCBN

**17**

Primary Voltage	Interconnect	Connect Lines to
504	H4 to H5	H1 & H8
492	H3 to H5	H1 & H8
480	H3 to H6	H1 & H8
468	H2 to H6	H1 & H8
456	H2 to H7	H1 & H8
Secondary Voltage	Interconnect	Connect Lines to
252	H1 to H5 H4 to H8	H1 & H8
240	H1 to H6 H3 to H8	H1 & H8
228	H1 to H7 H2 to H8	H1 & H8
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS5 Series**

120/208/240/277 Volt Primary  
120/240 Volt Secondary  
Taps: None

**20**

Primary Voltage	Interconnect	Connect Lines to
277	H4 to H5	H1 & H8
240	H3 to H6	H1 & H8
208	H2 to H7	H1 & H8
Secondary Voltage	Interconnect	Connect Lines to
120	H1 to H6 H3 to H8	H1 & H8
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS12 Series**

### Electrical Connections (Single Phase)

600 Volt Primary,  
120/240 Volt Secondary  
Taps: None

**21**

Primary Voltage	Interconnect	Connect Lines to
600		H1 & H2
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1, X2 & X4
120	X1 to X3 X2 to X4	X1 & X4

**HS10 Series**

Note: 1 through 2 kVA units have electrostatic shielding.

600 Volt Primary  
120/240 Volt Secondary  
Taps: 2, 5% FCBN

**22**

Primary Voltage	Interconnect	Connect Lines to
600	H3 to H4	H1 & H6
570	H2 to H4	H1 & H6
540	H2 to H5	H1 & H6
Secondary Voltage	Interconnect	Connect Lines to
240	X2 to X3	X1 & X4
120-0-120	X2 to X3 X2 to $\perp$	X1-X2-X4
120	X1 to X3 X2 to X4	X1 & X4

**HS10 Series**

190/200/208/220/380/400/415/440 Volt Pri.  
110/220 Volt Secondary  
Taps: None

**23**

Primary Voltage	Interconnect	Connect Lines to
440	H5 to H6	H1 & H10
415	H4 to H6	H1 & H9
400	H3 to H6	H1 & H8
380	H2 to H6	H1 & H7
220	H1 to H6 H5 to H10	H1 & H10
208	H1 to H6 H4 to H9	H1 & H9
200	H1 to H6 H3 to H8	H1 & H8
190	H1 to H6 H2 to H7	H1 & H7
Secondary Voltage	Interconnect	Connect Lines to
220	X2 to X3	X1 & X4
110-0-110	X2 to X3 X2 to $\perp$	X1, X2 & X4
110	X1 to X3 X2 to X4	X1 & X4

**HS14 Series (1 kVA only)**

190/200/208/220/380/400/415/440 Volt Pri.  
110/220 Volt Secondary  
Taps: None

**24**

Primary Voltage	Interconnect	Connect Lines to
440	H5 to H6	H1 & H10
415	H4 to H7	H1 & H10
400	H3 to H8	H1 & H10
380	H2 to H9	H1 & H10
220	H1 to H6, H5 to H10	H1 & H10
208	H1 to H7, H4 to H10	H1 & H10
200	H1 to H8, H3 to H10	H1 & H10
190	H1 to H9 H2 to H10	H1 & H10
Secondary Voltage	Interconnect	Connect Lines to
220	X2 to X3	X1 & X4
110-0-110	X2 to X3 X2 to $\perp$	X1, X2 & X4
110	X1 to X3 X2 to X4	X1 & X4

**HS14 Series**



Note:

Connect the electrostatic shield to the equipment ground (green) or to both the equipment ground and the system ground (white). Specifications are subject to change without notice.



### Electrical Connections (Three Phase)

240 Δ Volt Primary 208Y/120 Volt Secondary  
Taps: 2, 5% FCBN **25**

Primary Voltage	Connect Taps	Connect Lines To
240	1-H1 & 2-H2 & 3-H3	H1, H2, H3
228	4-H1 & 5-H2 & 6-H3	H1, H2, H3
216	7-H1 & 8-H2 & 9-H3	H1, H2, H3
Secondary Voltage	Interconnect	Connect Lines To
208		X1, X2, & X3
120		X0, X1, X2, X3

**HT6 Series**

208 Δ Volt Primary 208Y/120 Volt Secondary  
Taps: 2, 5% FCBN **26**

Primary Voltage	Connect Taps	Connect Lines To
208	1-H1 & 2-H2 & 3-H3	H1, H2, H3
198	4-H1 & 5-H2 & 6-H3	H1, H2, H3
187	7-H1 & 8-H2 & 9-H3	H1, H2, H3
Secondary Voltage	Interconnect	Connect Lines To
208		X1, X2, & X3
120		X0, X1, X2, X3

**HT3 Series**

480 Δ Volt Primary 208Y/120 Volt Secondary  
Taps: 2, 5% FCBN **27**

Primary Voltage	Interconnect	Connect Lines to
480	1-H1 & 2-H2 & 3- H3	H1, H2, H3
456	4-H1 & 5-H2 & 6- H3	H1, H2, H3
432	7-H1 & 8-H2 & 9- H3	H1, H2, H3
Secondary Voltage	Interconnect	Connect Lines to
208		X1, X2, & X3
120		X0, X1, X2, X3

**HT1 Series**

480 Δ Volt Primary 240 Δ w/120 CT Volt Secondary  
Taps: 2, 5% FCBN **28**

Primary Voltage	Connect Taps	Connect Lines To
480	1-H1 & 2-H2 & 3-H3	H1, H2, H3
456	4-H1 & 5-H2 & 6-H3	H1, H2, H3
432	7-H1 & 8-H2 & 9-H3	H1, H2, H3
Secondary Voltage	Interconnect	Connect Lines To
240		X1, X2, X3
120-0-120	X6 to	X1-X6-X3

**HT5 Series**

480 Δ Volt Primary 380Y/220 Volt Secondary  
Taps: 2, 5% FCBN **29**

Primary Voltage	Interconnect	Connect Lines to
480	1-H1 & 2-H2 & 3-H3	H1, H2 & H3
456	4-H1 & 5-H2 & 6-H3	H1, H2 & H3
432	7-H1 & 8-H2 & 9-H3	H1, H2 & H3
Secondary Voltage	Interconnect	Connect Lines to
380		X1, X2, X3
220		X0, X1, X2, X3

**HT9 Series**

= Earth Ground

**Notes:**

Connect the electrostatic shield to the equipment ground (green) or to both the equipment ground and the system ground (white). Specifications are subject to change without notice.

Electrical Connections (Three Phase)

600 Δ Volt Primary  
208Y/120 Volt Secondary  
Taps: 2, 5% FCBN

**30**

Diagram showing primary windings (H1, H2, H3) and secondary windings (X0, X1, X2, X3) with a SHIELD connection. Includes a delta connection diagram for the secondary.

Primary Voltage	Connect Taps	Line Leads
600	1-H1 & 2-H2 & 3-H3	H1, H2, H3
570	4-H1 & 5-H2 & 6-H3	H1, H2, H3
540	7-H1 & 8-H2 & 9-H3	H1, H2, H3
Secondary Voltage		Line Leads
208		X1, X2, X3
120		X0, X1, X2, X3

**HT7 Series**

208 Δ Volt Primary  
480Y/277 Volt Secondary  
Taps: 2, 5% FCBN

**31**

Diagram showing primary windings (X1, X2, X3) and secondary windings (H0, H1, H2, H3) with a SHIELD connection. Includes a delta connection diagram for the secondary.

Primary Voltage	Connect Taps	Line Leads
208	1-X1 & 2-X2 & 3-X3	X1, X2, X3
198	4-X1 & 5-X2 & 6-X3	X1, X2, X3
187	7-X1 & 8-X2 & 9-X3	X1, X2, X3
Secondary Voltage		Line Leads
480		H1, H2, H3
277		H0, H1, H2, H3

**HT84 Series**

240 Δ Volt Primary  
480Y/277 Volt Secondary  
Taps: 2, 5% FCBN

**32**

Diagram showing primary windings (X1, X2, X3) and secondary windings (H0, H1, H2, H3) with a SHIELD connection. Includes a delta connection diagram for the secondary.

Primary Voltage	Connect Taps	Line Leads
240	1-X1 & 2-X2 & 3-X3	X1, X2, X3
228	4-X1 & 5-X2 & 6-X3	X1, X2, X3
216	7-X1 & 8-X2 & 9-X3	X1, X2, X3
Secondary Voltage		Line Leads
480		H1, H2, H3
277		H0, H1, H2, H3

**HT85 Series**

Notes:

Connect the electrostatic shield to the equipment ground (green) or to both the equipment ground and the system ground (white). Specifications are subject to change without notice.

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