

## 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 provides extra shock and vibration resistance. SolaHD transformers fully comply with the latest edition 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 I30 °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

- Available as standard in Cold Rolled Steel or Painted Stainless Steel
- 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 (Type 3R versions only)
- 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

#### All Models

- cULus Listed: E25872, E77014
  - UL 1561 or UL 5085-1, UL 5085-2
  - CSA C22.2 No. 47 or No. 66
  - RoHS Compliant

#### Group 5, Export Models

- CE Low Voltage Directive
  - IEC 61558-1, IEC 61558-2-4

### Accessories and Optional Design Styles

- Other enclosure styles available (contact Technical Support for details):
  - 316 Stainless Steel
  - Copper Wound designs
- UL Listed/NEMA Type 4/12 or 4X Encapsulated Enclosures
- Low temperature designs available
- cULus Listed E361435 transformers for Class I, Division 2/Zone 2 hazardous locations are available as custom designs.

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 <sup>2</sup>	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
<b>Non-Encapsulated</b>										
.050	HS1B50	N/A	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	HS1B75		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	HS1B100		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	HS1B150		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	5.00 (2.27)	2	15	.625/.313	1.25/.625
.250	HS1B250		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	HS1F500B	HSP1F500B	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	HS1F750B	HSP1F750B	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	HS1F1BS	HSP1F1BS	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	HS1F1.5AS	HSP1F1.5AS	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	HS1F2AS	HSP1F2AS	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	HS5F3AS	HSP5F3AS	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	HS5F5AS	HSP5F5AS	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	HS5F7.5AS	HSP5F7.5AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	155.0 (70.31)	4	18	31.3/15.6	62.5/31.3
10	HS5F10 AS	HSP5F10 AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	166.0 (75.30)	4	18	41.7/20.8	83.3/41.7
15	HS5F15AS	HSP5F15AS	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	HS5F25 AS	HSP5F25 AS	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 I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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
<b>Non-Encapsulated</b>										
.100	HS10B100	N/A	6.00 (152.4)	4.00 (101.6)	3.00 (76.2)	4.00 (1.81)	2	21	0.167	.833/.417
.150	HS10B150		8.00 (203.2)	4.00 (101.6)	4.00 (101.6)	5.00 (2.27)	2	21	0.25	1.25/.625
.250	HS10B250		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	HS10F500B	HSP10F500B	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	HS10F750B	HSP10F750B	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	HS10F1BS	HSP10F1BS	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	HS10F1.5AS	HSP10F1.5AS	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	HS10F2AS	HSP10F2AS	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	HS10F3AS	HSP10F3AS	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	HS10F5AS	HSP10F5AS	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	HS10F7.5AS	HSP10F7.5AS	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	HS10F10 AS	HSP10F10 AS	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	150.0 (68.04)	4	22	16.7	83.3/41.7

Notes:

1. Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.
2. Contact Technical Services for other enclosure types.

## 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 <sup>3</sup>	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	HSP12F1BS	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	HSP12F1.5AS	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	HSP12F2AS	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	HSP12F3AS	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	HSP12F5AS	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	HSP12F7.5AS	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	HS12F10 AS	HSP12F10 AS	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: 190/200/208/220/380/400/415/440 Volt Primary, 110/220 Secondary, 50/60 Hz Copper wound 200/208/230/400/415/460 Volt Primary, 115/230 Secondary, 50/60 Hz Copper wound 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 <sup>3</sup>	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	HSP14F1BS	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	HSP14F1.5BS	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	HSP14F2BS	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	HSP14F3BS	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	HSP14F5BS	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	HSP14F7.5BS	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	HSP14F10BS	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

### Group 5: 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 <sup>3</sup>	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	HS14F1CS-CE	HSP14F1CS-CE	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	52.0 (23.6)	4	24	4.5/2.3	9.1/4.5
1.5	HS14F1.5CS-CE	HSP14F1.5CS-CE	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	55.0 (25.0)	4	24	6.8/3.4	13.6/6.8
2	HS14F2CS-CE	HSP14F2CS-CE	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	62.0 (28.1)	4	24	9.1/4.5	18.2/9.1
3	HS14F3CS-CE	HSP14F3CS-CE	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	142.0 (64.4)	4	24	13.6/6.8	27.3/13.6
5	HS14F5CS-CE	HSP14F5CS-CE	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	146.0 (66.2)	4	24	22.7/11.4	45.5/22.7
7.5	HS14F7.5CS-CE	HSP14F7.5CS-CE	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	175.0 (79.4)	4	24	34.1/17.0	68.2/34.1

#### 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. 240 and 480 V not available at 50 Hz.
- Contact Technical Services for other enclosure types.

## 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 <sup>3</sup>	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	HTP1F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	105.0 (47.63)	4	27	3.6	8.3
6	HT1F6AS	HTP1F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	27	7.2	16.6
9	HT1F9AS	HTP1F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	250.0 (113.40)	4	27	10.8	25.0
15	HT1F15AS	HTP1F15AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	261.0 (118.39)	4	27	18.1	41.7
30	HT1F30 AS	HTP1F30 AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	696.0 (315.70)	4	27	36.1	83.4
45	HT1F45AS	HTP1F45AS	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 <sup>3</sup>	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	HTP3F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	26	7.2	8.3
6	HT3F6AS	HTP3F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	26	14.4	16.6
9	HT3F9AS	HTP3F9AS	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 $\Delta$ Secondary with 120 V reduced capacity center tap, 60 Hz <sup>2</sup>

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>3</sup>	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	HTP5F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	105.0 (47.63)	4	28	3.6	7.2
6	HT5F6AS	HTP5F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	28	7.2	14.4
9	HT5F9AS	HTP5F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	250.0 (113.40)	4	28	10.8	21.7
15	HT5F15AS	HTP5F15AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	305.0 (138.35)	4	28	18.1	36.1
30	HT5F30 AS	HTP5F30 AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	698.0 (316.61)	4	28	36.1	72.2
45	HT5F45AS	HTP5F45AS	30.00 (762.0)	29.00 (736.6)	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 <sup>3</sup>	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	HTP6F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	25	7.2	8.3
6	HT6F6AS	HTP6F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	25	14.4	16.6
9	HT6F9AS	HTP6F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	25	21.7	25.0

#### Notes:

1. Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.
2. Refer to *Capacity of Center Tap in Center Tap Delta Transformers* at the beginning of this section.
3. Contact Technical Services for other enclosure types.

## Selection Tables: Three Phase

### Group E: 480 Volt Δ Primary, 380Y/220 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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	HT79F3AS	HTP79F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	121.0 (54.88)	4	29	3.6	4.6
6	HT79F6AS	HTP79F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	29	7.2	9.1
9	HT79F9AS	HTP79F9AS	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 Δ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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	HT7F3AS	HTP7F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	116.0 (52.62)	4	30	2.9	8.3
6	HT7F6AS	HTP7F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	30	5.8	16.6
9	HT7F9AS	HTP7F9AS	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 Δ Primary, 480Y/277 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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	HT84F3AS	HTP84F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	31	8.3	3.6
6	HT84F6AS	HTP84F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	31	16.6	7.2
9	HT84F9AS	HTP84F9AS	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 Δ Primary, 480Y/277 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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	HT85F3AS	HTP85F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	97.0 (44.00)	4	32	7.2	3.6
6	HT85F6AS	HTP85F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	32	14.4	7.2
9	HT85F9AS	HTP85F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	256.0 (116.12)	4	32	21.6	10.8

### Group J: 480 Volt Δ Primary, 480Y/277 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel <sup>2</sup>	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	HT81F3AS	HTP81F3AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	121.0 (54.88)	4	29	3.6	3.6
6	HT81F6AS	HTP81F6AS	13.00 (330.2)	16.00 (406.4)	9.00 (228.6)	150.0 (68.03)	4	29	7.2	7.2
9	HT81F9AS	HTP81F9AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	255.0 (115.7)	4	29	10.8	10.8
15	HT81F15AS	HTP81F15AS	17.00 (431.8)	20.00 (508.0)	11.00 (279.4)	261.0 (118.39)	4	29	18.1	18.1
30	HT81F30 AS	HTP81F30 AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	696.0 (315.70)	4	29	36.1	36.1
45	HT81F45AS	HTP81F45AS	30.00 (762.0)	29.00 (736.6)	12.00 (304.8)	844.0 (382.83)	4	29	54.2	54.2

#### Notes:

1. Design Styles and Electrical Connections can be found at the end of the Non-Ventilated Distribution Transformers section.
2. Contact Technical Services for other enclosure types.

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: 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**

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
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**

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
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**

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
120	H1 to H3 H2 to H5	H1 & H5
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.

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
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.

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

### 24

Primary Voltage	Interconnect	Connect Lines to
440/460/480	H5 to H6	H1 & H10
415	H4 to H7	H1 & H10
400/415	H3 to H8	H1 & H10
380/400	H2 to H9	H1 & H10
220/230/240	H1 to H6, H5 to H10	H1 & H10
208	H1 to H7, H4 to H10	H1 & H10
200/208	H1 to H8, H3 to H10	H1 & H10
190/200/208	H1 to H9 H2 to H10	H1 & H10
Secondary Voltage	Interconnect	Connect Lines to
220/230/240	X2 to X3	X1 & X4
110,220/115, 230/120,240	X2 to X3 X2 to $\perp$	X1, X2 & X4
110/115/120	X1 to X3 X2 to X4	X1 & X4

**HS14 Series**

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
440/460/480	H5 to H6	H1 & H10
415	H4 to H6	H1 & H9
400/415	H3 to H6	H1 & H8
380/400	H2 to H6	H1 & H7
220/230/240	H1 to H6 H5 to H10	H1 & H10
208	H1 to H6 H4 to H9	H1 & H9
200/208	H1 to H6 H3 to H8	H1 & H8
190/200/208	H1 to H6 H2 to H7	H1 & H7
Secondary Voltage	Interconnect	Connect Lines to
220/230/240	X2 to X3	X1 & X4
110,220/115, 230/120,240	X2 to X3 X2 to $\perp$	X1, X2 & X4
110/115/120	X1 to X3 X2 to X4	X1 & X4

**HS14F1BS**

$\perp$  = 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.



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		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		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		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

**HT79 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)

**30**  
600 Δ Volt Primary  
208Y/120 Volt Secondary  
Taps: 2, 5% FCBN

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**

**31**  
208 Δ Volt Primary  
480Y/277 Volt Secondary  
Taps: 2, 5% FCBN

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**

**32**  
240 Δ Volt Primary  
480Y/277 Volt Secondary  
Taps: 2, 5% FCBN

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**

**33**  
480 Δ Volt Primary  
480Y/277 Volt Secondary  
Taps: 2, 5% FCBN

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
480		X1, X2, X3
277		X0, X1, X2, X3

**HT81 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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