

Automation Transformers - Non-Ventilated 50 VA to 45 kVA

SolaHD encapsulated transformers are rated for Hazardous Locations (Class 1, Division 2, Group A-D) as well as harsh industrial environments. Encapsulation and rugged NEMA 3R enclosures protect the transformer from dust, moisture, and provide extra shock and vibration resistance. SolaHD UL listed transformers fully comply with the latest addition of the National Electrical Code for Class 1, Division 2, Group A-D locations when installed in compliance with NEC 501.100(B).

Features

Single Phase: .05 – .250 kVA

- UL-3R non encapsulated enclosure for indoor and outdoor service
- Low temperature rise, UL Class 130°C or 180°C insulation system, 80°C temperature rise under full load
- Conduit knockouts for side entry into wiring compartment
- Copper lead wire terminations
- Class 1, Division 2

Single Phase: 0.500 – 25 kVA

Three Phase: 3 – 45 kVA

- UL-3R encapsulated enclosure for indoor and outdoor service
- Electrostatically shielded for quality power on sizes 1 kVA and larger
- UL Class 180°C or 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 1, Division 2 ratings or encapsulation.
- Surge Suppressors

Accessories and Optional Design Styles*

- Wall mounting brackets (500 lbs maximum) (Item WB1C)
- Weather Shields
- Stainless Steel Enclosures
- Totally enclosed non-ventilated designs (TENV)
- Open core and coil designs
- Copper Wound designs
- NEMA 4/12 or 4X Encapsulated Enclosures
- Low temperature designs available.

*Not all optional designs are UL listed. Contact Technical Services.

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

Selection Table: Single Phase, Encapsulated

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 (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn*	Primary Amps	Secondary Amps
Non-Encapsulated										
.050	HS1B50	N/A	6	4	3	3	2	15	.208/1.04	4.16/2.08
.075	HS1B75		6	4	3	3	2	15	.312/.156	6.25/3.12
.100	HS1B100		6	4	3	4	2	15	.417/.208	8.33/4.17
.150	HS1B150		8	4	4	5	2	15	.625/.313	1.25/.625
.250	HS1B250		8	4	4	8	2	15	1.04/.512	2.08/1.04
Encapsulated										
0.5	HS1F500B	HSS1F500B	10	6	5	22	3	15	2.08/1.04	4.16/2.08
0.75	HS1F750B	HSS1F750B	10	6	5	27	3	15	3.13/1.56	6.25/3.13
1	HS1F1BS	HSS1F1BS	10	6	5	28	3	16	4.17/2.08	8.33/4.17
1.5	HS1F1.5AS	HSS1F1.5AS	12	10	7	38	4	16	6.25/3.13	12.5/6.25
2	HS1F2AS	HSS1F2AS	12	10	7	45	4	16	8.33/4.17	16.7/8.33
3	HSS5F3AS	HSS5F3AS	12	10	7	55	4	17	12.5/6.25	25.0/12.5
5	HSS5F5AS	HSS5F5AS	17	14	9	131	4	17	20.8/10.4	41.6/20.8
7.5	HSS5F7.5AS	HSS5F7.5AS	17	14	9	156	4	18	31.3/15.6	62.5/31.3
10	HSS5F10AS	HSS5F10AS	17	14	9	156	4	18	41.7/20.8	83.3/41.7
15	HSS5F15AS	HSS5F15AS	30	29	12	549	4	18	62.5/31.2	125.0/62.5
25	HSS5F25AS	HSS5F25AS	30	29	12	637	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 (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style*	Elec Conn*	Primary Amps	Secondary Amps
Non-Encapsulated										
.100	HS10B100	N/A	6	4	3	4	2	21	0.167	.833/4.17
.150	HS10B150		8	4	4	5	2	21	0.25	1.25/.625
.250	HS10B250		8	4	4	8	2	21	0.417	2.08/1.04
Encapsulated										
.500	HS10F500B	HSS10F500B	10	6	5	22	3	21	0.833	4.16/2.08
.750	HS10F750B	HSS10F750B	10	6	5	23	3	21	1.25	6.25/3.13
1	HS10F1BS	HSS10F1BS	10	6	5	28	3	21	1.67	8.33/4.17
1.5	HS10F1.5AS	HSS10F1.5AS	12	10	7	38	4	21	2.5	12.5/6.25
2	HS10F2AS	HSS10F2AS	12	10	7	60	4	21	3.33	16.7/8.33
3	HS10F3AS	HSS10F3AS	12	10	7	66	4	22	5.0	25.0/12.5
5	HS10F5AS	HSS10F5AS	17	14	9	100	4	22	8.3	41.6/20.8
7.5	HS10F7.5AS	HSS10F7.5AS	17	14	9	135	4	22	12.5	62.5/31.3
10	HS10F10AS	HSS10F10AS	17	14	9	150	4	22	16.7	83.3/41.7

Note:

* Design Style and Electrical Connections can be found on pages 204-205.

Visit our website at www.solaheviduty.com or
contact **Technical Services** at (800) 377-4384 with any questions.

Selection Table: Single Phase, Encapsulated

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 (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style*	Elec Conn*	Primary Amps @ 277 V	Secondary Amps
Encapsulated										
1	HS12F1BS	HSS12F1BS	10	6	5	29	3	19	3.6	8.33/4.17
1.5	HS12F1.5AS	HSS12F1.5AS	12	10	7	40	4	20	5.4	12.5/6.25
2	HS12F2AS	HSS12F2AS	12	10	7	60	4	20	7.2	16.7/8.33
3	HS12F3AS	HSS12F3AS	12	10	7	66	4	20	10.8	25.0/12.5
5	HS12F5AS	HSS12F5AS	17	14	9	104	4	20	18.0	41.6/20.8
7.5	HS12F7.5AS	HSS12F7.5AS	17	14	9	135	4	20	27.1	62.5/31.3
10	HS12F10AS	HSS12F10AS	17	14	9	156	4	20	36.1	83.3/41.7

Note:

* Design Style and Electrical Connections can be found on pages 204-205.

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 inch (mm)	Width inch (mm)	Depth inch (mm)	Ship Weight Approx. – lbs (kg)	Design Style*	Elec Conn*	Primary Amps	Secondary Amps
Encapsulated, Copper Wound										
1	HS14F1BS	HSS14F1BS	10 (254.0)	6 (152.4)	5 (127.0)	34 (15.42)	3	23	4.5/2.3	9.1/4.5
1.5	HS14F1.5BS	HSS14F1.5BS	12 (304.8)	10 (254.0)	7 (177.8)	40 (18.13)	4	24	6.8/3.4	13.6/6.8
2	HS14F2BS	HSS14F2BS	12 (304.8)	10 (254.0)	7 (177.8)	60 (27.21)	4	24	9.1/4.5	18.2/9.1
3	HS14F3BS	HSS14F3BS	12 (304.8)	10 (254.0)	7 (177.8)	73 (33.11)	4	24	13.6/6.8	27.3/13.6
5	HS14F5BS	HSS14F5BS	17 (431.8)	14 (355.6)	9 (228.6)	100 (45.36)	4	24	22.7/11.4	45.5/22.7
7.5	HS14F7.5BS	HSS14F7.5BS	17 (431.8)	14 (355.6)	9 (228.6)	140 (63.50)	4	24	34.1/17.0	68.2/34.1
10	HS14F10BS	HSS14F10BS	17 (431.8)	14 (355.6)	9 (228.6)	175 (79.38)	4	24	45.5/22.7	90.9/45.5

Notes:

* Design Style and Electrical Connections can be found on pages 204-205.

** Amperage calculated at 220/440 Volts on primary. UL Listed, CSA Certified and CE Marked. 240 & 480 V not available at 50 Hz.

Selection Tables: Three Phase, Encapsulated

Group A: 480 Volt Δ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style	Elec Conn**	Primary Amps**	Secondary Amps
3	HT1F3AS	HTS1F3AS	13	16	9	105	4	27	3.6	8.3
6	HT1F6AS	HTS1F6AS	13	16	9	110	4	27	7.2	16.6
9	HT1F9AS	HTS1F9AS	17	20	11	250	4	27	10.8	25.0
15	HT1F15AS	HTS1F15AS	17	20	11	261	4	27	18.1	41.7
30*	HT1F30AS	HTS1F30AS	30	29	12	696	4	27	36.1	83.4
45*	HT1F45AS	HTS1F45AS	30	29	12	844	4	27	54.2	125.0

Group B: 208 Volt Δ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT3F3AS	HTS3F3AS	13	16	9	97	4	26	7.2	8.3
6	HT3F6AS	HTS3F6AS	13	16	9	141	4	26	14.4	16.6
9	HT3F9AS	HTS3F9AS	17	20	11	256	4	26	21.7	25.0

Group C: 480 Volt Δ Primary, 240 Volt Δ , 120 Secondary with reduced capacity center tap, 60 Hz***

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT5F3AS	HTS5F3AS	13	16	9	105	4	28	3.6	7.2
6	HT5F6AS	HTS5F6AS	13	16	9	110	4	28	7.2	14.4
9	HT5F9AS	HTS5F9AS	17	20	11	250	4	28	10.8	21.7
15	HT5F15AS	HTS5F15AS	17	20	11	305	4	28	18.1	36.1
30*	HT5F30AS	HTS5F30AS	29	25	12	698	4	28	36.1	72.2
45*	HT5F45AS	HTS5F45AS	29	25	12	876	4	28	54.2	108.3

Group D: 240 Volt Δ Primary, 208Y/120 Secondary, 60 Hz

kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT6F3AS	HTS6F3AS	13	16	9	97	4	25	7.2	8.3
6	HT6F6AS	HTS6F6AS	13	16	9	141	4	25	14.4	16.6
9	HT6F9AS	HTS6F9AS	17	20	11	256	4	25	21.7	25.0

* cUL Underwriters tested to CSA standards.

** Design Style and Electrical Connections can be found on pages 204-205.

*** See the Technical Notes section with respect to capacity of center tap.

Selection Tables: Three Phase, Encapsulated

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



kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT79F3AS	HTS79F3AS	13	16	9	121	4	29	3.6	4.6
6	HT79F6AS	HTS79F6AS	13	16	9	141	4	29	7.2	9.1
9	HT79F9AS	HTS79F9AS	17	20	11	255	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	Height (inch)	Width (inch)	Depth (inch)	Ship Weight Approx. (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT7F3AS	HTS7F3AS	13	16	9	116	4	30	2.9	8.3
6	HT7F6AS	HTS7F6AS	13	16	9	145	4	30	5.8	16.6
9	HT7F9AS	HTS7F9AS	17	20	11	225	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	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style	Elec Conn**	Primary Amps**	Secondary Amps
3	HT84F3AS	HTS84F3AS	13	16	9	97	4	31	8.3	3.6
6	HT84F6AS	HTS84F6AS	13	16	9	141	4	31	16.6	7.2
9	HT84F9AS	HTS84F9AS	17	20	11	256	4	31	25.0	10.8

Group H: 240 Volt Δ Primary, 480Y/277 Secondary, 60 Hz

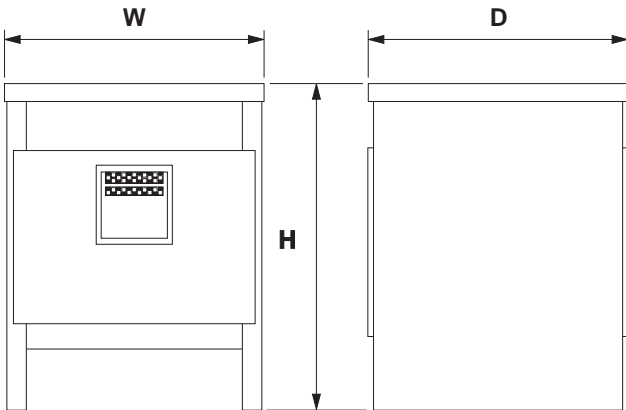


kVA	Catalog Number Group I Rolled Steel	Catalog Number Group II Stainless Steel	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
3	HT85F3AS	HTS85F3AS	13	16	9	97	4	32	7.2	3.6
6	HT85F6AS	HTS85F6AS	13	16	9	141	4	32	14.4	7.2
9	HT85F9AS	HTS85F9AS	17	20	11	256	4	32	21.6	10.8

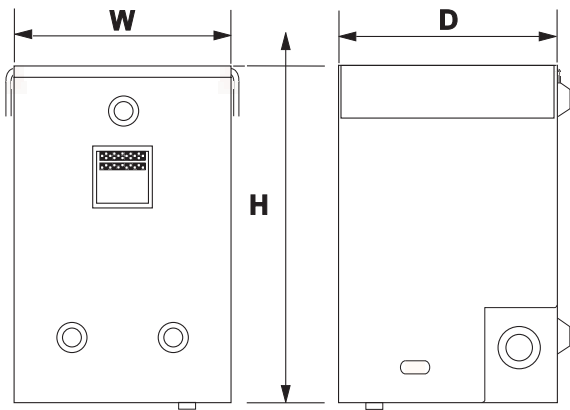
* cUL Underwriters tested to CSA standards.

** Design Styles and Electrical Connections can be found on pages 204-205.

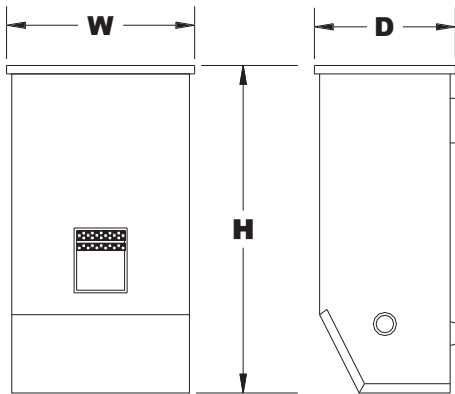
Design Styles



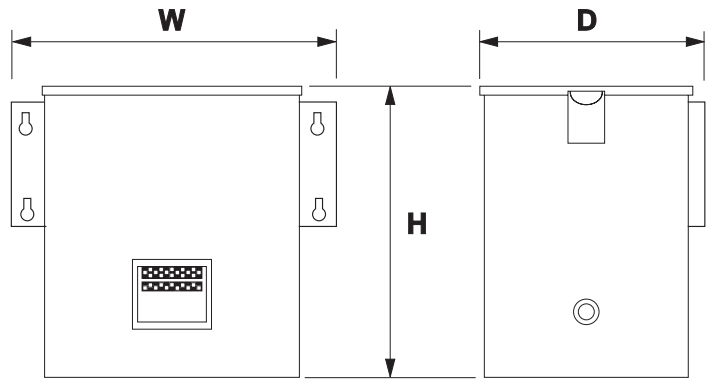
Style 1 - Ventilated



Style 2 - Non-Encapsulated

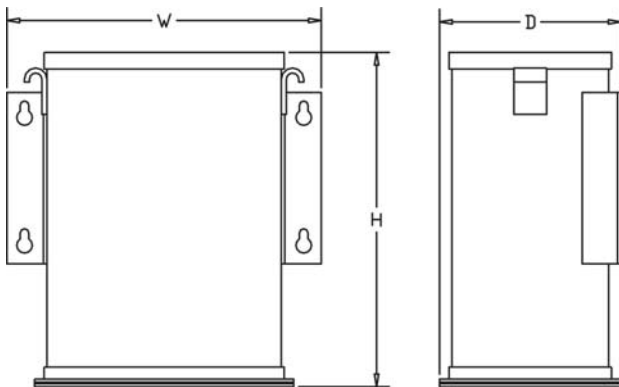


Style 3 - Encapsulated



Style 4 - Encapsulated

Customized Enclosures - Contact Technical Services



Style 5 - Encapsulated

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

Visit our website at www.solaheviduty.com or contact **Technical Services** at (800) 377-4384 with any questions.

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	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

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

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

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)



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)

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 \perp	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

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

30

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

\perp = 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)

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

31

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

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.

Custom Transformers

If you can't find what you are looking for here, please fill out the information below and submit to our Technical Services Group. We are happy to provide a quote on a custom transformer if available. SolaHD-Duty is pleased to offer the broadest range of transformers on the market including many custom designs.

Date:				
Customer Information				
Contact:		Phone/Fax:		
Address:		Email:		
City/State:				
Specifications*				
*Size (Required)		*Quantity		Temperature Rise (Check One)
<input type="checkbox"/> KVA	<input type="checkbox"/> VA	<input type="checkbox"/> One Time Buy	<input type="checkbox"/> Annual Usage	<input type="checkbox"/> 80°C <input type="checkbox"/> 115°C <input type="checkbox"/> 150°C
Check all that apply:			Enclosure Type (Check One)	
Three Phase		Single Phase		VENTILATED
<input type="checkbox"/> 50 Hz		<input type="checkbox"/> 60 Hz (Standard)		<input type="checkbox"/> ENCAPSULATED
<input type="checkbox"/> Copper Windings		<input type="checkbox"/> Aluminum Windings (Standard)		<input type="checkbox"/> ENCLOSED (NON-UL)
No Electrostatic Shield		<input type="checkbox"/> NEMA 1 (SS)		<input type="checkbox"/> NEMA 3R
<input type="checkbox"/> LVGP		<input type="checkbox"/> SCR Drive Isolation		<input type="checkbox"/> NEMA 3R (SS)
<input type="checkbox"/> Energy Star		<input type="checkbox"/> K-Factor 13		<input type="checkbox"/> NEMA 3R (SS)
<input type="checkbox"/> K-Factor 4		<input type="checkbox"/> K-Factor 20		<input type="checkbox"/> NEMA 4/12 (SS)
<input type="checkbox"/> Other:				<input type="checkbox"/> NEMA 4X (SS)
(SS) STAINLESS STEEL GRADE: <input type="checkbox"/> Standard (304) <input type="checkbox"/> Optional (316)				
Industrial Control Transformers				
<input type="checkbox"/> ICE <input type="checkbox"/> HSZ Series <input type="checkbox"/> Other:				
*Primary Voltage			*Secondary Voltage	
<input type="checkbox"/> 120	Taps:	<input type="checkbox"/> Standard	<input type="checkbox"/> 120	
<input type="checkbox"/> 208		<input type="checkbox"/> Other	<input type="checkbox"/> 208	
<input type="checkbox"/> 240			<input type="checkbox"/> 240	
<input type="checkbox"/> 480	If 3 Phase:	<input type="checkbox"/> Delta (Standard)	<input type="checkbox"/> 480	If 3 Phase: <input type="checkbox"/> Delta (Standard)
<input type="checkbox"/> 600		<input type="checkbox"/> Wye	<input type="checkbox"/> 600	
<input type="checkbox"/> Other Voltage: _____			<input type="checkbox"/> Other Voltage: _____	
Agency Certifications				
Check all that apply: <input type="checkbox"/> UL <input type="checkbox"/> CSA or cUL <input type="checkbox"/> CE <input type="checkbox"/> Other: _____				
Additional Information				
Please quote a Catalog or Design Number		<input type="checkbox"/> Similar to :		
(if "similar to" note changes above)		<input type="checkbox"/> Exactly Like:		
*Does this request pertain to a bid specification? <input type="checkbox"/> Yes <input type="checkbox"/> No				

Specification Guide for Low Voltage, General Purpose, Dry Type Transformers (600 Volt Class) - .05 kVA to 500 kVA

General

Single and three phase distribution transformers (600 Volt and below)

- Provide and install, as referenced on the electrical plans, enclosed dry type transformers as manufactured by SolaHD or approved equal.

Standards

- Transformers must be listed by Underwriters Laboratory, evaluated to CSA standards and designed, constructed and rated in accordance with NEMA ST 20 and applicable IEEE & OSHA specifications. Certain units are compliant with the TP-1 standards enacted by the Energy Policy Act of 2005.

Construction

Cores

- All transformer cores shall be constructed of low loss, high quality, electrical grade laminate steel. By design, the flux density is to be kept well below the saturation level to reduce audible sound level and minimize core losses. The core volume shall allow operation at 10% above rated primary voltage at no load without exceeding the temperature rise of the unit.

Coils

- Coil conductors shall be either aluminum or copper and must be continuous. The entire core and coil assembly shall be impregnated with a thermal setting varnish and cured to reduce hot spots in the coils and seal out moisture. Coils with exposed magnet wire will not be acceptable. Transformers shall have common core construction.
- All transformers 1 kVA or larger shall incorporate a faraday (electrostatic) shield between primary and secondary windings for the attenuation of voltage spikes, line noise and voltage transients.
- General purpose transformers are classified as isolation transformers.

Enclosures

- Transformer enclosures shall be constructed of heavy gauge sheet steel and coated with a grey powder paint finish (ANSI 61). Enclosures shall be UL/NEMA Type 1/3R rated for outdoor use. This information must be listed on the transformer nameplate.

- Maximum transformer enclosure temperature will not exceed 65°C rise above a 40°C ambient under full load.
- The transformer enclosure must be grounded by the installer in accordance with the latest edition of the National Electric Code and any local codes or ordinances.

Performance

- Audible sound levels will not exceed limits established in NEMA ST20:

Less than 10 kVA	40 db
10 to 50 kVA	45 db
51 to 150 kVA	50 db
151 to 300 kVA	55 db
301 to 500 kVA	60 db

- Transformers shall incorporate a UL recognized insulation system.

Warranty

- Transformers are warranted against material, performance and workmanship defects for a period of ten (10) years from date of manufacture with the provision for an additional two (2) years. Custom transformers come with a 1-year warranty.

Approval

- Typical performance and dimensional data on similar units must be submitted on all transformers for approval. Factory testing must have been conducted in accordance with NEMA ST20. Submitted performance and dimensional data must include, but is not limited to the following:

- Height, width, depth, mounting dimensions, conduit entry locations and lifting provisions
- Weight
- Transformer losses
- Potential tests both applied and induced
- Temperature - ambient and rise under full load
- Insulation class
- % excitation current
- Electrical schematic including taps
- Polarity and phase rotation
- kVA, frequency and voltage rating
- IR, IX, and IZ percentages at reference temperature
- Audible sound level