

## 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 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 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

#### All Models

- 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

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

### 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
- 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<br>Rolled Steel | Catalog Number Group II<br>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                    | 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                               | HSS1F500B                                  | 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                               | HSS1F750B                                  | 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                                | HSS1F1BS                                   | 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                              | HSS1F1.5AS                                 | 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                                | HSS1F2AS                                   | 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                                | HSS5F3AS                                   | 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                                | HSS5F5AS                                   | 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                              | HSS5F7.5AS                                 | 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                      | HS5F10AS                               | HSS5F10AS                                  | 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                      | HS5F15AS                               | HSS5F15AS                                  | 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                      | HS5F25AS                               | HSS5F25AS                                  | 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<br>Rolled Steel | Catalog Number Group 2<br>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                    | 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                              | HSS10F500B                                | 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                              | HSS10F750B                                | 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                               | HSS10F1BS                                 | 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                             | HSS10F1.5AS                               | 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                               | HSS10F2AS                                 | 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                               | HSS10F3AS                                 | 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                               | HSS10F5AS                                 | 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                             | HSS10F7.5AS                               | 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                      | HS10F10AS                              | HSS10F10AS                                | 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: 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 | 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      |

### 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 | 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                         | HSS14F1CS-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                       | HSS14F1.5CS-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                         | HSS14F2CS-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                         | HSS14F3CS-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                         | HSS14F5CS-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                       | HSS14F7.5CS-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.

## 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:

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.

## 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

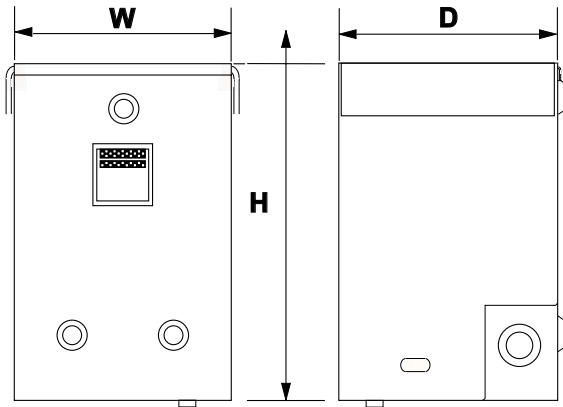
| kVA | Catalog Number Group I Rolled Steel | Catalog Number Group II Stainless Steel | Height in (mm) | Width in (mm) | Depth in (mm) | Ship Weight Approx. (lbs) | Design Style * | Elec Conn * | Primary Amps | Secondary Amps |
|-----|-------------------------------------|---|----------------|---------------|---------------|---------------------------|----------------|-------------|--------------|----------------|
| 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

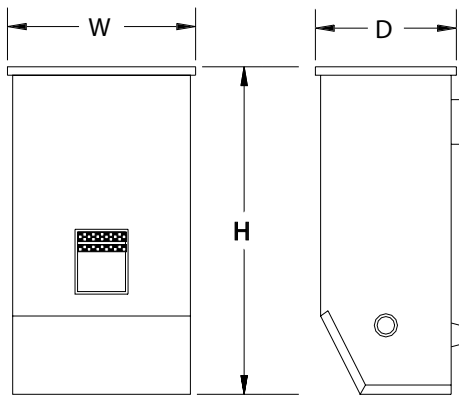
| kVA | Catalog Number Group I Rolled Steel | Catalog Number Group II Stainless Steel | Height in (mm) | Width in (mm) | Depth in (mm) | Ship Weight Approx. (lbs) | Design Style * | Elec Conn * | Primary Amps | Secondary Amps |
|-----|-------------------------------------|---|----------------|---------------|---------------|---------------------------|----------------|-------------|--------------|----------------|
| 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.

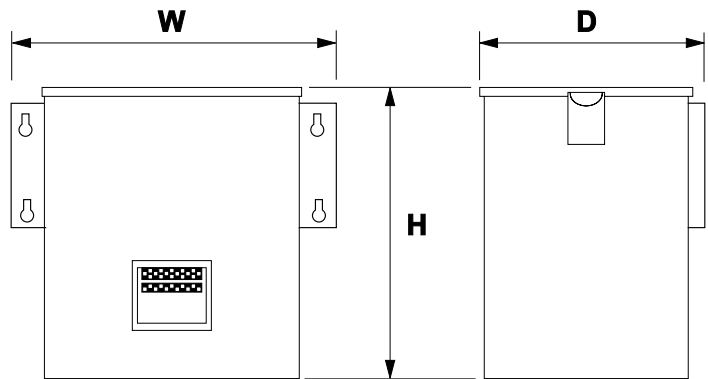
Design Styles



Style 2 - Non-Encapsulated

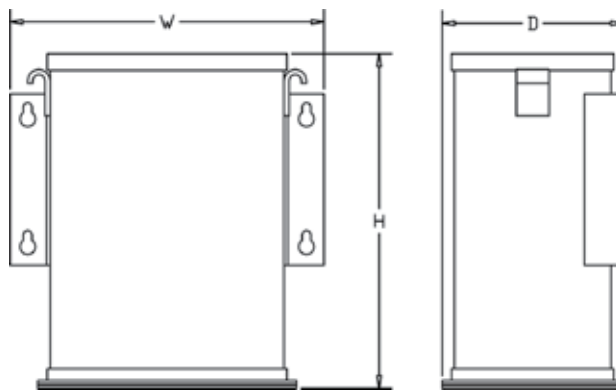


Style 3 - Encapsulated



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<br>H2 to H4      | H1 & H4          |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H2 to H4      | H1 & H4          |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H4 to H8      | H1 & H8          |
| 240               | H1 to H6<br>H3 to H8      | H1 & H8          |
| 228               | H1 to H7<br>H2 to H8      | H1 & H8          |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H5 to H10     | H1 & H10         |
| 240               | H1 to H7<br>H4 to H10     | H1 & H10         |
| 228               | H1 to H8<br>H3 to H10     | H1 & H10         |
| 216               | H1 to H9<br>H2 to H10     | H1 & H10         |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H2 to H5      | H1 & H5          |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H3 to H8      | H1 & H8          |
| Secondary Voltage | Interconnect              | Connect Lines to |
| 240               | X2 to X3                  | X1 & X4          |
| 120-0-120         | X2 to X3<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>X2 to $\perp$ | X1, X2 & X4      |
| 120               | X1 to X3<br>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,<br>H5 to H10    | H1 & H10         |
| 208                         | H1 to H7,<br>H4 to H10    | H1 & H10         |
| 200/208                     | H1 to H8,<br>H3 to H10    | H1 & H10         |
| 190/200/208                 | H1 to H9<br>H2 to H10     | H1 & H10         |
| Secondary Voltage           | Interconnect              | Connect Lines to |
| 220/230/240                 | X2 to X3                  | X1 & X4          |
| 110,220/115,<br>230/120,240 | X2 to X3<br>X2 to $\perp$ | X1, X2 & X4      |
| 110/115/120                 | X1 to X3<br>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<br>X2 to $\perp$ | X1-X2-X4         |
| 120               | X1 to X3<br>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<br>H5 to H10     | H1 & H10         |
| 208                         | H1 to H6<br>H4 to H9      | H1 & H9          |
| 200/208                     | H1 to H6<br>H3 to H8      | H1 & H8          |
| 190/200/208                 | H1 to H6<br>H2 to H7      | H1 & H7          |
| Secondary Voltage           | Interconnect              | Connect Lines to |
| 220/230/240                 | X2 to X3                  | X1 & X4          |
| 110,220/115,<br>230/120,240 | X2 to X3<br>X2 to $\perp$ | X1, X2 & X4      |
| 110/115/120                 | X1 to X3<br>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)

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

| 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**

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

| 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**

**27**  
 480 Δ Volt Primary  
 208Y/120 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 |                     | Connect Lines to |
| 208               |                     | X1, X2, & X3     |
| 120               |                     | X0, X1, X2, X3   |

**HT1 Series**

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

| 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**

**29**  
 480 Δ Volt Primary  
 380Y/220 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 |
| 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

| 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

| 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.

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