

## 15 to 500 kVA

### Applications

- Designed for commercial and industrial loads in challenging environments

### Specifications

- NEMA3R rated enclosure
- Single Phase units 15 through 100 kVA
- Three Phase units 15 through 500 kVA
- 60 Hz operation
- Aluminum windings
- 150°C temperature rise
- 220°C insulation class units
- Heat-cured ASA-61 gray powder coat finish
- Cores of high quality electrical steel
- Primary taps on most units
- Lugs provided for units up to and including 75 kVA on catalog items

### Features, Functions, Benefits

- Large connection compartment with knockouts for ease of wiring and installation
- Completely enclosed for use in harsh environments
- Quiet operation for installation flexibility
- Seismic certification for all units



### Standards

- Standard efficiency for US installations
- Meets NRCAN-2019 standards for Canada
- Built in accordance with NEMA, ANSI, UL and CSA standards

### Options and Accessories

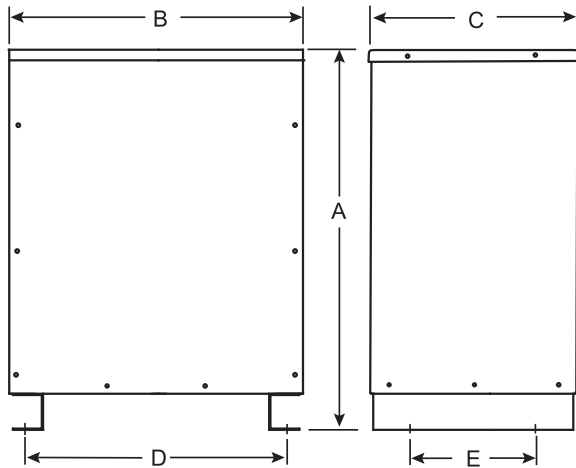
- NEMA4/4X (stainless), 12/12X enclosures
- 50/60 Hz optional
- Other sizes, voltages and temperature rises available
- Copper windings
- Electrostatic shield
- CE Marked units available as custom

### Approvals



**Three-Phase Enclosure Figure**

**Figure 23**



**Enclosure Options**

Jefferson Electric can meet NEMA standards or build enclosures to suit your special needs. Contact an Application Engineer at 800-892-3755, [technical\\_services@jeffersonelectric.com](mailto:technical_services@jeffersonelectric.com).

Frequent variations include:

- NEMA4, 4x, 12 and 12X enclosures
- Stainless steel construction
- Custom colors and materials

**Wall Mounting Bracket Kits**

| Part Number  | Description                        | Max Unit Wgt (lbs) |
|--------------|------------------------------------|--------------------|
| 223-7008-075 | For 16 to 30 kVA units, 150°C rise | 750                |

**Model Numbers Defined**

**433-TXXY-ABC**

**3 Phase**  
**Totally Enclosed Non-Ventilated**  
 Single Phase units available; see page 5-6 or website for details

**Type**  
 Standard efficiency 6

| kVA Rating / XX | kVA Rating / XX | kVA Rating / XX | kVA Rating / XX |
|-----------------|-----------------|-----------------|-----------------|
| 15.0            | 16              | 150             | 26              |
| 20              | 17              | 167             | 27              |
| 25              | 18              | 200             | 28              |
| 30              | 19              | 225             | 29              |
| 37.5            | 20              | 250             | 30              |
| 45              | 21              | 300             | 31              |
| 50              | 22              | 333             | 32              |
| 75              | 23              | 400             | 33              |
| 100             | 24              | 500             | 34              |
| 112.5           | 25              |                 |                 |

| Primary   | Secondary |   |
|-----------|-----------|---|
| 208       | 480Y/277  | 1 |
| 240       | 208Y/120  | 2 |
| 240       | 480Y/277  | 3 |
| 480       | 208Y/120  | 4 |
| 480       | 480Y/277  | 5 |
| Specials* |           | 6 |
| 480       | 240 Delta | 7 |
| 208       | 208Y/120  | 8 |
| 600       | 208Y/120  | 9 |

**Wiring**  
 Aluminum 0  
 Copper 8

**Temperature Rise**  
 150°C Rise 0  
 115°C Rise 1  
 80°C Rise 8

**Shield**  
 No shield 0  
 Shield 5

\*Suffix defined incrementally

**Three-Phase Totally Enclosed Non-Ventilated Transformers**

Commercial & Industrial Loads • 150°C Temperature Rise • Aluminum Windings • NEMA3R Enclosures

Taps: 15 to 225 kVA 2 @ 2.5% FCAN & 4 @ 2.5% FBCN / 300 to 500 kVA 2 @ 2.5% FCAN & 2 @ 2.5% FBCN

| <b>480V Delta — 208Y/120V</b> |                |                  |                   |                  |                  |            |            |              |                           |                |
|-------------------------------|----------------|------------------|-------------------|------------------|------------------|------------|------------|--------------|---------------------------|----------------|
| kVA                           | Catalog Number | Enclosure Figure | Height (A) inches | Width (B) inches | Depth (C) inches | (D) inches | (E) inches | Est Ship Wgt | Wall Mounting Bracket Kit | Wiring Diagram |
| 15                            | 433-6164-000   | 23               | 25                | 22               | 17               | 17.4       | 13         | 310          | 223-7008-075              | T480E          |
| 30                            | 433-6194-000   | 23               | 32                | 27               | 21               | 23.5       | 16         | 585          | 223-7008-075              | T480E          |
| 45                            | 433-6214-000   | 23               | 38                | 29               | 23               | 25.5       | 18         | 775          |                           | T480E          |
| 75                            | 433-6234-000   | 23               | 42                | 33               | 26               | 30         | 21         | 1,000        |                           | T480E          |
| 112.5                         | 433-6254-000   | 23               | 46                | 35               | 30               | 30.8       | 25         | 1,315        |                           | T480E          |
| 150                           | 433-6264-000   | 23               | 52                | 35               | 30               | 30.8       | 25         | 1,660        |                           | T480E          |
| 225                           | 433-6294-000   | 23               | 60                | 48               | 33               | 42         | 27         | 2,460        |                           | T480E          |
| 300                           | 433-6314-000   | 23               | 72                | 52               | 40               | 34         | 42         | 4,055        |                           | T480M          |
| 500                           | 433-6344-000   | 23               | 81                | 66               | 44               | 60.5       | 38.5       | 6,195        |                           | T480M          |

| <b>480V Delta — 240V Delta / 5% 120V CT</b> |                |    |    |    |    |      |      |       |              |       |
|---|----------------|----|----|----|----|------|------|-------|--------------|-------|
| 15  | 433-6167-000 * | 23 | 25 | 22 | 17 | 17.4 | 13   | 310   | 223-7008-075 | T480G |
| 30  | 433-6197-000 * | 23 | 32 | 27 | 21 | 23.5 | 16   | 585   | 223-7008-075 | T480G |
| 45  | 433-6217-000 * | 23 | 38 | 29 | 23 | 25.5 | 18   | 775   |              | T480G |
| 75  | 433-6237-000 * | 23 | 42 | 33 | 26 | 30   | 21   | 1,000 |              | T480G |
| 112.5                                       | 433-6257-000 * | 23 | 46 | 35 | 30 | 30.8 | 25   | 1,315 |              | T480G |
| 150   | 433-6267-000 * | 23 | 52 | 35 | 30 | 30.8 | 25   | 1,660 |              | T480G |
| 225   | 433-6297-000 * | 23 | 60 | 48 | 33 | 42   | 27   | 2,460 |              | T480G |
| 300   | 433-6317-000 * | 23 | 72 | 52 | 40 | 34   | 42   | 4,055 |              | T480N |
| 500   | 433-6347-000 * | 23 | 81 | 66 | 44 | 60.5 | 38.5 | 6,195 |              | T480N |

Taps: 2 @ 2.5% FCAN & 2 @ 2.5% FBCN

| <b>600V Delta — 208Y/120V</b> |              |    |    |    |    |      |      |       |              |       |
|-------------------------------|--------------|----|----|----|----|------|------|-------|--------------|-------|
| 15                            | 433-6169-000 | 23 | 25 | 22 | 17 | 17.4 | 13   | 310   | 223-7008-075 | T600G |
| 30                            | 433-6199-000 | 23 | 32 | 27 | 21 | 23.5 | 16   | 585   | 223-7008-075 | T600G |
| 45                            | 433-6239-000 | 23 | 38 | 29 | 23 | 25.5 | 18   | 775   |              | T600G |
| 75                            | 433-6259-000 | 23 | 42 | 33 | 26 | 30   | 21   | 1,000 |              | T600G |
| 112.5                         | 433-6259-000 | 23 | 46 | 35 | 30 | 30.8 | 25   | 1,315 |              | T600G |
| 150                           | 433-6269-000 | 23 | 52 | 35 | 30 | 30.8 | 25   | 1,660 |              | T600G |
| 225                           | 433-6299-000 | 23 | 60 | 48 | 33 | 42   | 27   | 2,460 |              | T600G |
| 300                           | 433-6319-000 | 23 | 72 | 52 | 40 | 34   | 42   | 4,055 |              | T600G |
| 500                           | 433-6349-000 | 23 | 81 | 66 | 44 | 60.5 | 38.5 | 6,195 |              | T600G |

| <b>600V Delta — 480Y/277V</b> |       |    |    |    |    |      |      |       |              |       |
|-------------------------------|-------|----|----|----|----|------|------|-------|--------------|-------|
| 15                            | TBD   | 23 | 25 | 22 | 17 | 17.4 | 13   | 310   | 223-7008-075 | T600I |
| 30                            | TBD   | 23 | 32 | 27 | 21 | 23.5 | 16   | 585   | 223-7008-075 | T600I |
| 45                            | TBD   | 23 | 38 | 29 | 23 | 25.5 | 18   | 775   |              | T600I |
| 75                            | TBD   | 23 | 42 | 33 | 26 | 30   | 21   | 1,000 |              | T600I |
| 112.5                         | TBD   | 23 | 46 | 35 | 30 | 30.8 | 25   | 1,315 |              | T600I |
| 150                           | TBD   | 23 | 52 | 35 | 30 | 30.8 | 25   | 1,660 |              | T600I |
| 225                           | TBD   | 23 | 60 | 48 | 33 | 42   | 27   | 2,460 |              | T600I |
| 300                           | TBD   | 23 | 72 | 52 | 40 | 34   | 42   | 4,055 |              | T600I |
| 500                           | TBD * | 23 | 81 | 66 | 44 | 60.5 | 38.5 | 6,195 |              | T600I |

See website for additional kVA, copper windings and temperature options.

Housing dimensions subject to change without notice. Consult website or factory where dimensions are critical.

Use the "Find a Product" tool for detailed specification sheets.

For further information, contact an Application Engineer at 800-892-3755, technical\_services@jeffersonelectric.com

\* **CAUTION:** When using the 120V center tap for single-phase applications, the single-phase load should not exceed 5% of the three-phase kVA rating. Connect the X3 "high leg" to the "B" phase per NEC 384-3 (do not use X3 leg for 120V lighting). A separate single-phase transformer should be used if the single-phase load is in excess of 5%. Fuse input side per current NEC requirements.

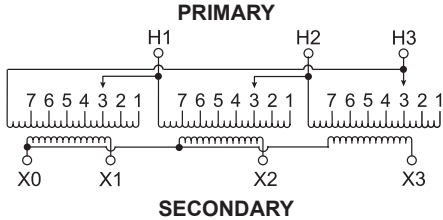


### Three-Phase Wiring Diagrams

#### T480E Wiring Diagram & Connections

##### Wiring Diagram

Primary: 480 Volts Delta  
Secondary: 208Y/120 Volts



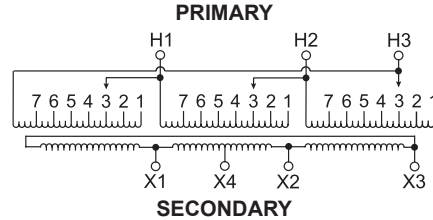
##### Connections

| Primary Volts   | On Each Coil Jumper Taps To   | Primary Lines Connect To |
|-----------------|-------------------------------|--------------------------|
| 504             | 1                             | H1, H2, H3               |
| 492             | 2                             | H1, H2, H3               |
| 480             | 3                             | H1, H2, H3               |
| 468             | 4                             | H1, H2, H3               |
| 456             | 5                             | H1, H2, H3               |
| 444             | 6                             | H1, H2, H3               |
| 432             | 7                             | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To    |                          |
| 208             | X1, X2, X3                    |                          |
| 120             | Between X0 and X1 or X2 or X3 |                          |
| 1 phase         |                               |                          |

#### T480G Wiring Diagram & Connections

##### Wiring Diagram

Primary: 480 Volts Delta  
Secondary: 240 Volts Delta/120 Volts



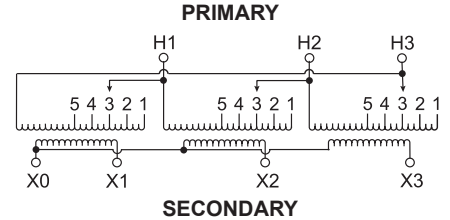
##### Connections

| Primary Volts   | On Each Coil Jumper Taps To | Primary Lines Connect To |
|-----------------|-----------------------------|--------------------------|
| 504             | 1                           | H1, H2, H3               |
| 492             | 2                           | H1, H2, H3               |
| 480             | 3                           | H1, H2, H3               |
| 468             | 4                           | H1, H2, H3               |
| 456             | 5                           | H1, H2, H3               |
| 444             | 6                           | H1, H2, H3               |
| 432             | 7                           | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To  |                          |
| 240             | X1, X2, X3                  |                          |
| 120             | X1 and X4 or X2 or X4       |                          |
| 1 phase         |                             |                          |

#### T480M Wiring Diagram & Connections

##### Wiring Diagram

Primary: 480 Volts Delta  
Secondary: 208Y/120 Volts



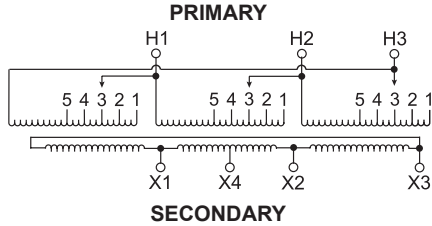
##### Connections

| Primary Volts   | On Each Coil Jumper Taps To   | Primary Lines Connect To |
|-----------------|-------------------------------|--------------------------|
| 504             | 1                             | H1, H2, H3               |
| 492             | 2                             | H1, H2, H3               |
| 480             | 3                             | H1, H2, H3               |
| 468             | 4                             | H1, H2, H3               |
| 456             | 5                             | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To    |                          |
| 208             | X1, X2, X3                    |                          |
| 120             | Between X0 and X1 or X2 or X3 |                          |
| 1 phase         |                               |                          |

**T480N** Wiring Diagram & Connections

**Wiring Diagram**

Primary: 480 Volts Delta  
Secondary: 240 Volts Delta/120 Volts



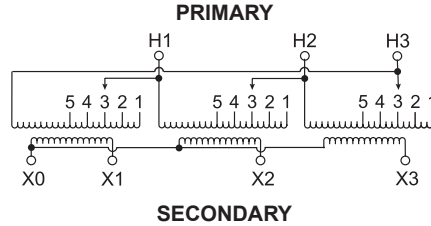
**Connections**

| Primary Volts   | On Each Coil Jumper Taps To | Primary Lines Connect To |
|-----------------|-----------------------------|--------------------------|
| 504             | 1                           | H1, H2, H3               |
| 492             | 2                           | H1, H2, H3               |
| 480             | 3                           | H1, H2, H3               |
| 468             | 4                           | H1, H2, H3               |
| 456             | 5                           | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To  |                          |
| 240             | X1, X2, X3                  |                          |
| 120             | X1 and X4 or X2 or X4       |                          |
| 1 phase         |                             |                          |

**T600G** Wiring Diagram & Connections

**Wiring Diagram**

Primary: 600 Volts Delta  
Secondary: 208Y/120 Volts



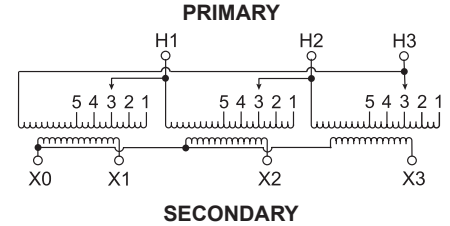
**Connections**

| Primary Volts   | On Each Coil Jumper Taps To   | Primary Lines Connect To |
|-----------------|-------------------------------|--------------------------|
| 630             | 1                             | H1, H2, H3               |
| 615             | 2                             | H1, H2, H3               |
| 600             | 3                             | H1, H2, H3               |
| 585             | 4                             | H1, H2, H3               |
| 570             | 5                             | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To    |                          |
| 208             | X1, X2, X3                    |                          |
| 120             | Between X0 and X1 or X2 or X3 |                          |
| 1 phase         |                               |                          |

**T600I** Wiring Diagram & Connections

**Wiring Diagram**

Primary: 600 Volts Delta  
Secondary: 480Y/277 Volts



**Connections**

| Primary Volts   | On Each Coil Jumper Taps To   | Primary Lines Connect To |
|-----------------|-------------------------------|--------------------------|
| 630             | 1                             | H1, H2, H3               |
| 615             | 2                             | H1, H2, H3               |
| 600             | 3                             | H1, H2, H3               |
| 585             | 4                             | H1, H2, H3               |
| 570             | 5                             | H1, H2, H3               |
| Secondary Volts | Secondary Lines Connect To    |                          |
| 480             | X1, X2, X3                    |                          |
| 277             | Between X0 and X1 or X2 or X3 |                          |
| 1 phase         |                               |                          |

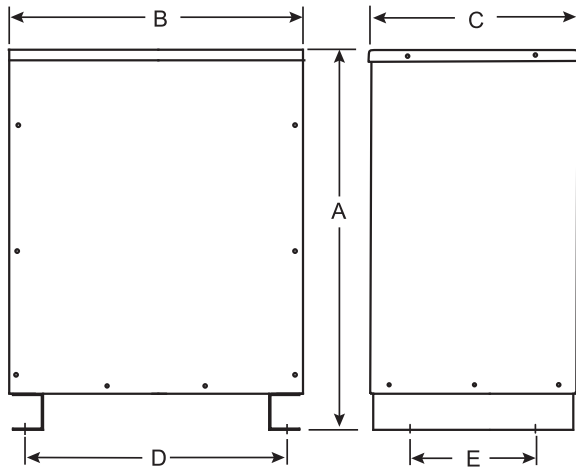
More wiring diagrams can be found in catalog's appendix, section 15.

Use the "Find a Product" tool on our website for detailed specification sheets.

For further information, contact an Application Engineer at 800-892-3755, [technical\\_services@jeffersonelectric.com](mailto:technical_services@jeffersonelectric.com)

**Single-Phase Enclosure Figure**

**Figure 23**



**Enclosure Options**

Jefferson Electric can meet NEMA standards or build enclosures to suit your special needs. Contact an Application Engineer at 800-892-3755, [technical\\_services@jeffersonelectric.com](mailto:technical_services@jeffersonelectric.com).

Frequent variations include:

- NEMA4, 4x, 12 and 12X enclosures
- Stainless steel construction
- Custom colors and materials

**Wall Mounting Bracket Kits**

| Part Number  | Description                        | Max Unit Wgt (lbs) |
|--------------|------------------------------------|--------------------|
| 223-7008-075 | For 16 to 50 kVA units, 150°C rise | 750                |

**Model Numbers Defined**

**431-TXXY-ABC**

**1 Phase**  
**Totally Enclosed Non-Ventilated**  
 Three-Phase units available; see page 5-2 or website for details

**Type**  
 Standard efficiency 6

| kVA Rating / XX | kVA Rating / XX |
|-----------------|-----------------|
| 15.0 16         | 45 21           |
| 20 17           | 50 22           |
| 25 18           | 75 23           |
| 30 19           | 100 24          |
| 37.5 20         |                 |

| Primary                    | Secondary |   |
|----------------------------|-----------|---|
| 120x240                    | 120/240   | 1 |
| 208                        | 120/240   | 2 |
| Reserved for special items |           | 3 |
| 277                        | 120/240   | 4 |
| 240x480                    | 120/240   | 5 |
| Specials*                  |           | 6 |
| 480                        | 120/240   | 7 |
| 600                        | 120/240   | 8 |

**Wiring**  
 Aluminum 0  
 Copper 8

**Temperature Rise**  
 150°C Rise 0  
 115°C Rise 1  
 80°C Rise 8

**Shield**  
 No shield 0  
 Shield 5

\*Suffix defined incrementally

**Single-Phase Totally Enclosed Non-Ventilated Transformers**

Commercial & Industrial Loads • 150°C Temperature Rise with 25° Ambient • Aluminum Windings • NEMA3R Enclosures

| <b>240x480V — 120/240V • Taps: 2@2.5% FCAN, 4@2.5% FBCN</b> |                |                  |                   |                  |                  |            |            |              |                           |                |
|---|----------------|------------------|-------------------|------------------|------------------|------------|------------|--------------|---------------------------|----------------|
| kVA   | Catalog Number | Enclosure Figure | Height (A) inches | Width (B) inches | Depth (C) inches | (D) inches | (E) inches | Est Ship Wgt | Wall Mounting Bracket Kit | Wiring Diagram |
| 15  | 431-6165-000   | 23               | 25                | 22               | 17               | 17.4       | 13         | 330          | 223-7008-075              | S480F          |
| 25  | 431-6185-000   | 23               | 32                | 27               | 21               | 23.5       | 16         | 405          | 223-7008-075              | S480F          |
| 37.5  | 431-6205-000   | 23               | 38                | 29               | 23               | 25.5       | 18         | 535          | 223-7008-075              | S480F          |
| 50  | 431-6225-000   | 23               | 42                | 33               | 26               | 30         | 21         | 690          | 223-7008-075              | S480F          |
| 75  | 431-6235-000   | 23               | 42                | 33               | 26               | 30         | 21         | 1,235        |                           | S480F          |
| 100   | 431-6245-000   | 23               | 46                | 35               | 30               | 30.8       | 25         | 2,001        |                           | S480F          |
| <b>600V — 120/240V • Taps: 2@2.5% FCAN, 2@2.5% FBCN</b>     |                |                  |                   |                  |                  |            |            |              |                           |                |
| 15  | 431-6168-000   | 23               | 25                | 22               | 17               | 17.4       | 13         | 330          | 223-7008-075              | S600E          |
| 25  | 431-6188-000   | 23               | 32                | 27               | 21               | 23.5       | 16         | 405          | 223-7008-075              | S600E          |
| 37.5  | 431-6208-000   | 23               | 38                | 29               | 23               | 25.5       | 18         | 535          | 223-7008-075              | S600E          |
| 50  | 431-6228-000   | 23               | 42                | 33               | 26               | 30         | 21         | 690          | 223-7008-075              | S600E          |
| 75  | 431-6238-000   | 23               | 42                | 33               | 26               | 30         | 21         | 1,235        |                           | S600E          |
| 100   | 431-6248-000   | 23               | 46                | 35               | 30               | 30.8       | 25         | 2,001        |                           | S600E          |

See website for additional kVA, copper windings and temperature options.

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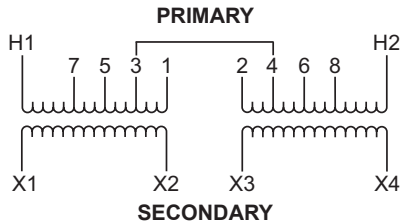


## Single-Phase Wiring Diagrams

### S480F Wiring Diagram & Connections

#### Wiring Diagram

Primary: 240 x 480 Volts  
Secondary: 120/240 Volts



#### Connections

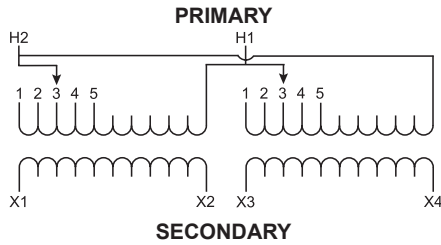
| Primary Volts | Jumpers Between Taps<br>Left Coil | Jumpers Between Taps<br>Right Coil | Primary Lines<br>Connect To |
|---------------|-----------------------------------|------------------------------------|-----------------------------|
| 504           | 1                                 | 2                                  | H1, H2                      |
| 492           | 3                                 | 2                                  | H1, H2                      |
| 480           | 3                                 | 4                                  | H1, H2                      |
| 468           | 5                                 | 4                                  | H1, H2                      |
| 456           | 5                                 | 6                                  | H1, H2                      |
| 444           | 7                                 | 6                                  | H1, H2                      |
| 432           | 7                                 | 8                                  | H1, H2                      |
| 252           | H2, 1                             | H1, 2                              | H1, H2                      |
| 240           | H2, 3                             | H1, 4                              | H1, H2                      |
| 228           | H2, 5                             | H1, 6                              | H1, H2                      |
| 216           | H2, 7                             | H1, 8                              | H1, H2                      |

| Secondary Volts | Interconnect         | Secondary Lines<br>Connect To |
|-----------------|----------------------|-------------------------------|
| 240             | X2 to X3             | X1, X4                        |
| 120/240         | X2 to X3             | X1, X2, X4                    |
| 120             | X1 to X3<br>X2 to X4 | X1, X4                        |

### S600E Wiring Diagram & Connections

#### Wiring Diagram

Primary: 600 Volts  
Secondary: 120/240 Volts



#### Connections

| Primary Volts | On Each Coil<br>Jumper Taps To | Primary Lines<br>Connect To |
|---------------|--------------------------------|-----------------------------|
| 630           | 1                              | H1, H2                      |
| 615           | 2                              | H1, H2                      |
| 600           | 3                              | H1, H2                      |
| 585           | 4                              | H1, H2                      |
| 570           | 5                              | H1, H2                      |

| Secondary Volts | Interconnect         | Secondary Lines<br>Connect To |
|-----------------|----------------------|-------------------------------|
| 240             | X2 to X3             | X1, X4                        |
| 120/240         | X2 to X3             | X1, X2, X4                    |
| 120             | X1 to X3<br>X2 to X4 | X1, X4                        |

More wiring diagrams can be found in catalog appendix, section 15.  
Use the "Find a Product" tool on our website for detailed spec sheet.

For further information, contact an Application Engineer at 800-892-3755, [technical\\_services@jeffersonelectric.com](mailto:technical_services@jeffersonelectric.com)