

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

- DOE and NRCAN-2019 exempt, standard efficiency
- Built in accordance with NEMA, ANSI, UL and CSA standards

Options and Accessories

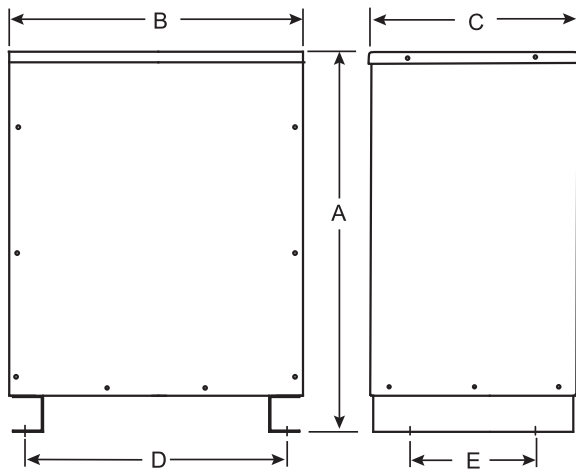
- NEMA4/4X (stainless), 12/12X enclosures
- 50/60 Hz optional
- Other sizes, voltages and temperature rises available
- Copper windings
- Electrostatic shield
- CE Marked units available as custom

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.

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

480V Delta — 208Y/120V										
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

480V Delta — 240V Delta / 5% 120V CT										
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

600V Delta — 208Y/120V										
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

600V Delta — 480Y/277V										
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.

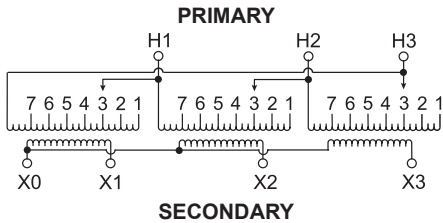


Three-Phase Wiring Diagrams

T480E Wiring Diagram & Connections

Wiring Diagram

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



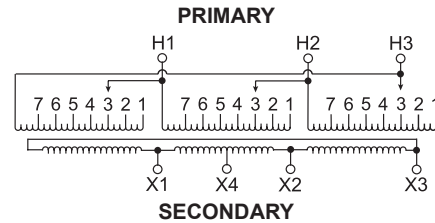
Connections

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



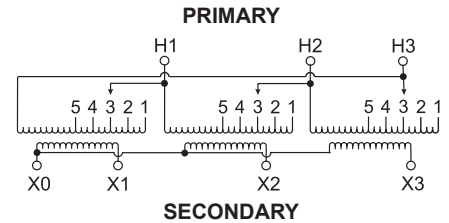
Connections

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



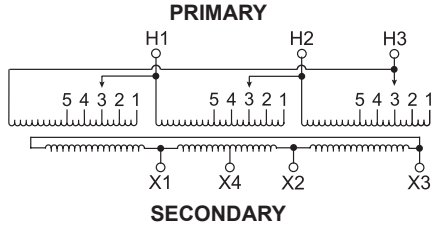
Connections

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



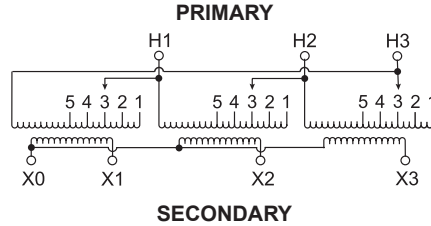
Connections

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



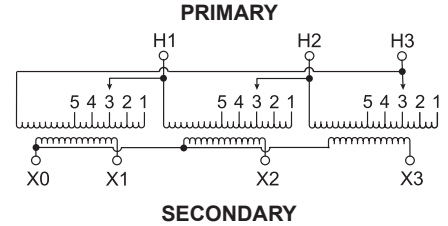
Connections

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		

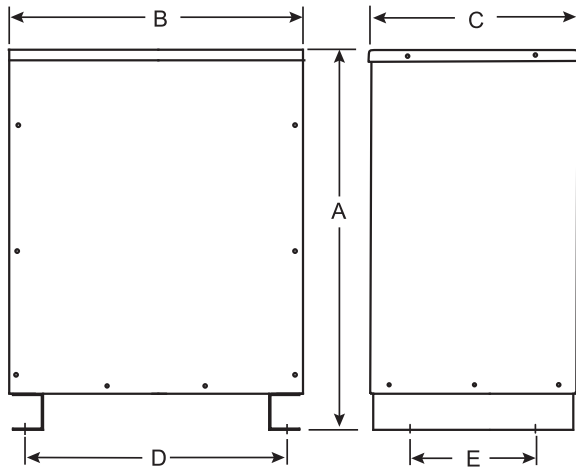
More wiring diagrams can be found in catalog's appendix, section 15.

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

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.

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	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

240x480V — 120/240V • Taps: 2@2.5% FCAN, 4@2.5% FBCN										
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
600V — 120/240V • Taps: 2@2.5% FCAN, 2@2.5% FBCN										
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.
 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.
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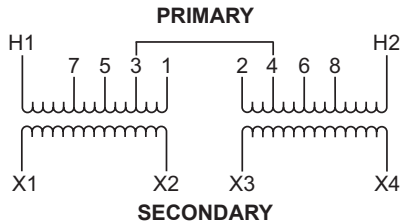


Single-Phase Wiring Diagrams

S480F Wiring Diagram & Connections

Wiring Diagram

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



Connections

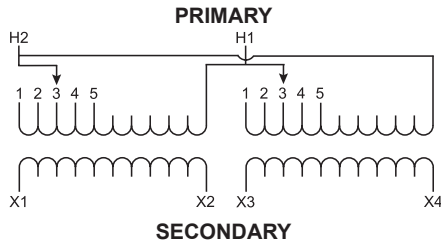
Primary Volts	Jumpers Between Taps Left Coil	Jumpers Between Taps Right Coil	Primary Lines Connect To
504	1	2	H1, H2
492	3	2	H1, H2
480	3	4	H1, H2
468	5	4	H1, H2
456	5	6	H1, H2
444	7	6	H1, H2
432	7	8	H1, H2
252	H2, 1	H1, 2	H1, H2
240	H2, 3	H1, 4	H1, H2
228	H2, 5	H1, 6	H1, H2
216	H2, 7	H1, 8	H1, H2

Secondary Volts	Interconnect	Secondary Lines Connect To
240	X2 to X3	X1, X4
120/240	X2 to X3	X1, X2, X4
120	X1 to X3 X2 to X4	X1, X4

S600E Wiring Diagram & Connections

Wiring Diagram

Primary: 600 Volts
Secondary: 120/240 Volts



Connections

Primary Volts	On Each Coil Jumper Taps To	Primary Lines 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 Connect To
240	X2 to X3	X1, X4
120/240	X2 to X3	X1, X2, X4
120	X1 to X3 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