



Cat. No. 1497-B-HXJX-3-N
Control Circuit Transformer, 3-pole
Fuse Block with Optional Cat. No.
1491-R150 Fuse Cover



Cat. No. 1497-C-BASX-0-N
Control Circuit Transformer,
Non-Fused

Bulletin 1497 — Global Control Circuit Transformers

Bulletin 1497 Global Control Circuit Transformers are designed to reduce supply voltages to control circuits. The complete line of transformers is available with optional factory-installed or panel-mount primary and secondary fuse block. A dual primary and secondary fuse block is pre-wired and mounted on top of the transformer up to 500 VA.

- 63...2000 VA
- Single, dual, and multi-tap primary voltages
- Single phase
- EN 60-529 finger-safe protection
- Epoxy encapsulated

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Standards Compliance

- EN61558
- C22.2 No. 66
- UL 506

Certifications

- cULus
- CE-mark

Cat. No. Explanation

Bulletin 1497 Multi-Tap Transformers

1497 - A - M1 - 3 - N
 a b c d

a

VA Rating	
Code	Description
A	63 VA
B	80 VA
C	130 VA
D	200 VA
E	250 VA
F	350 VA
G	500 VA
H	750 VA
J	800 VA
K	1000 VA
L	1600 VA
M	2000 VA

b

Primary and Secondary Voltage		
Code	Primary	Secondary
M1	240V, 208V	120V (60 Hz)
M2	240V, 208V	24V (60 Hz)
M3	240V, 208V	24V, 120V (60 Hz)
M4	415V, 400V, 380V	115V, 230V (50 Hz)
M5	415V, 400V, 380V	24V (50 Hz)

c

Fuse Block Options	
Code	Block Options
0	0 Primary, 0 Secondary
1	0 Primary, 1 Secondary
2	2 Primary, 0 Secondary
3	2 Primary, 1 Secondary

d

Factory Installed Options	
Code	Description
N	No Secondary Fuse, No Cover

Bulletin 1497 Transformers

1497 - A - BADX - 3 - N
 a b c d

a

VA Rating	
Code	Description
A	63 VA
B	80 VA
C	130 VA
D	200 VA
E	250 VA
F	350 VA
G	500 VA
H	750 VA
J	800 VA
K	1000 VA
L	1600 VA
M	2000 VA

b

Primary and Secondary Voltage		
Code	Primary	Secondary
HX	208V (60 Hz)	—
AX	240V (60 Hz), 220V (50 Hz)	—
BA	240/480V (60 Hz), 220/440V (50 Hz)	—
CX	600V (60 Hz), 550V (50 Hz)	—
DX*	—	120V (60 Hz)
JX	—	24V (60 Hz)
SX	—	120V (60 Hz), 110V (50Hz)
JK	—	24V (50 Hz), 26V (60 Hz)

c

Fuse Block Options	
Code	Block Options
0	0 Primary, 0 Secondary
1	0 Primary, 1 Secondary
2	2 Primary, 0 Secondary
3	2 Primary, 1 Secondary

d

Factory Installed Options	
Code	Description
N	No Secondary Fuse, No Cover

When the primary code **BA** is selected and a 120V AC secondary is desired, the secondary code **SX** should be selected.
* Not available for use with primary code **BA**.

Global Control Circuit Transformers

Product Selection

Selecting a Control Circuit Transformer

For proper transformer selection, three characteristics of the load circuit must be determined in addition to the minimum voltage required to operate the circuit. These are total steady-state (sealed) VA, total inrush VA, and inrush load power factor.

- Total steady-state (sealed) VA is the volt-amperes that the transformer must deliver to the load circuit for an extended period of time — the amount of current required to hold the contact in the circuit.
- Total inrush VA is the volt amperes that the transformer must deliver upon initial energization of the control circuit. Energization of electromagnetic devices takes 30...50 milliseconds. During this inrush period, the electromagnetic control devices draw many times normal current — 3...10 times normal is typical.
- Inrush load power factor is difficult to determine without detailed vector analysis of all the load components. Such an analysis is generally not feasible. Therefore, a safe assumption is 40% power factor.

Selection Process

1. Determine the total inrush VA of the control circuits from the table below. Do not neglect the current requirements of indicating lights and other devices that do not have an inrush VA but are re-energized at the same time as the other components in the circuit. Their total VA should be added to the total inrush VA.
2. Refer to the table below, *Regulation Data — Inrush VA*. If the supply circuit voltage (Step 1) is reasonably stable and fluctuates not more than $\pm 5\%$, refer to the 90% secondary voltage column. If it fluctuates as much as $\pm 10\%$, refer to the 95% secondary voltage column. Go down the column selected until at the inrush VA closest to, but not less than, the inrush VA of the control circuit.
3. Read to the far left side of the chart. The transformer's continuous nominal VA rating is now selected. The secondary voltage that will be delivered under inrush conditions will be either 85%, 90%, or 95% of the rated secondary voltage, depending on the column selected from the table below, *Regulation Data — Inrush VA*. The total sealed VA of the control circuit must not exceed the nominal VA rating of the transformer selected from the table below, *Typical Magnetic Motor Starter and Contactor Data 60 Hz, 120 Volt, 3-Pole*.
4. Refer to the specification tables on the following pages to select a transformer according to the required continuous nominal VA, and primary and secondary voltage combinations.

Regulation Data — Inrush VA

Nominal VA Rating	Inrush VA at 40% Power Factor			Power Factor Adjustments	
	85%	90%	95%	Power Factor	Multiply By
63	347	289	216	100%	0.64
80	338	290	229	90%	0.67
130	907	745	541	80%	0.71
200	1267	1039	754	70%	0.78
250	1394	1116	781	60%	0.82
350	2870	2298	1584	50%	0.91
500	3786	3013	2065	40%	1.00
750	7360	5763	3786	30%	1.11
800	7360	5763	3786	20%	1.29
1000	8837	6785	4329	10%	1.50
1600	14921	11328	7070	—	—
2000	20500	14850	9100	—	—

Typical Magnetic Motor Starter and Contactor Data 60 Hz, 120 Volt, 3-Pole

Contactor	NEMA Size						
	0	1	2	3	4	5	
Bulletin 500	192	192	240	660	1225	1490	VA Inrush
	29	29	29	45	69	96	VA Sealed

Global Control Circuit Transformers

Product Selection — Cross Reference

Transformer Replacement — Top Mounted Fuse Block ♣ — Fuses Not Included

VA	Cat. Nos.			
	Secondary 24V (60 Hz)		Secondary 120V (60 Hz)	
	Previous	Current	Previous	Current
	Primary 208V (60 Hz)			
63	1497-N45P	1497-A-HXJX-3-N	1497-N28P	1497-A-HXDX-3-N
80	1497-N48P	1497-B-HXJX-3-N	1497-N1P	1497-B-HXDX-3-N
130	1497-N51P	1497-C-HXJX-3-N	1497-N15P	1497-C-HXDX-3-N
200	1497-N54P	1497-D-HXJX-3-N	1497-N4P	1497-D-HXDX-3-N
250	1497-N57P	1497-E-HXJX-3-N	1497-N7P	1497-E-HXDX-3-N
350	1497-N60P	1497-F-HXJX-3-N	1497-N10P	1497-F-HXDX-3-N
500	1497-N63P	1497-G-HXJX-3-N	1497-N18P	1497-G-HXDX-3-N
VA	Primary 240/480V (60 Hz)			
63	1497-N46P	1497-A-BAJK-3-N	1497-N27P	1497-A-BASX-3-N
80	1497-N49P	1497-B-BAJK-3-N	1497-N2P	1497-B-BASX-3-N
130	1497-N52P	1497-C-BAJK-3-N	1497-N16P	1497-C-BASX-3-N
200	1497-N55P	1497-D-BAJK-3-N	1497-N5P	1497-D-BASX-3-N
250	1497-N58P	1497-E-BAJK-3-N	1497-N8P	1497-E-BASX-3-N
350	1497-N61P	1497-F-BAJK-3-N	1497-N11P	1497-F-BASX-3-N
500	1497-N64P	1497-G-BAJK-3-N	1497-N19P	1497-G-BASX-3-N
VA	Primary 600V (60 Hz)*			
63	1497-N47P	1497-A-CXJK-3-N	1497-N29P	1497-A-CXSX-3-N
80	1497-N50P	1497-B-CXJK-3-N	1497-N3P	1497-B-CXSX-3-N
130	1497-N53P	1497-C-CXJK-3-N	1497-N17P	1497-C-CXSX-3-N
200	1497-N56P	1497-D-CXJK-3-N	1497-N6P	1497-D-CXSX-3-N
250	1497-N59P	1497-E-CXJK-3-N	1497-N9P	1497-E-CXSX-3-N
350	1497-N62P	1497-F-CXJK-3-N	1497-N12P	1497-F-CXSX-3-N
500	1497-N65P	1497-G-CXJK-3-N	1497-N20P	1497-G-CXSX-3-N

Also rated 220/440V Primary, 110V Secondary 50 Hz, and 220/440V Primary, 24V Secondary 50 Hz.

* Also rated 550V Primary, 110V Secondary 50 Hz, and 550V Primary, 24V Secondary 50 Hz.

♣ Top-mounted fuse blocks are not available for transformers 750 VA and higher.

Global Control Circuit Transformers

Product Selection — Cross Reference, Continued

Transformer Replacement — No Fuse Block

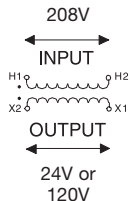
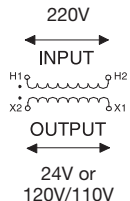
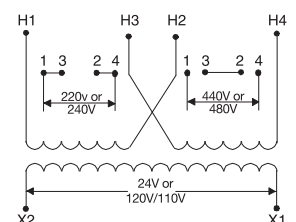
VA	Cat. Nos.			
	Secondary 24V (60 Hz)		Secondary 120V (60 Hz)	
	Previous	Current	Previous	Current
	Primary 208V (60 Hz)			
63	1497-N45	1497-A-HXJX-0-N	1497-N28	1497-A-HXDX-0-N
80	1497-N48	1497-B-HXJX-0-N	1497-N1	1497-B-HXDX-0-N
130	1497-N51	1497-C-HXJX-0-N	1497-N15	1497-C-HXDX-0-N
200	1497-N54	1497-D-HXJX-0-N	1497-N4	1497-D-HXDX-0-N
250	1497-N57	1497-E-HXJX-0-N	1497-N7	1497-E-HXDX-0-N
350	1497-N60	1497-F-HXJX-0-N	1497-N10	1497-F-HXDX-0-N
500	1497-N63	1497-G-HXJX-0-N	1497-N18	1497-G-HXDX-0-N
750	—	1497-H-HXJX-0-N	1497-N33	1497-H-HXDX-0-N
1000	—	1497-K-HXJX-0-N	1497-N36	1497-K-HXDX-0-N
1600	—	—	1497-N39	1497-L-HXDX-0-N
2000	—	—	1497-N42	1497-M-HXDX-0-N
VA	Primary 240/480V (60 Hz)‡			
63	1497-N46	1497-A-BAJK-0-N	1497-N27	1497-A-BASX-0-N
80	1497-N49	1497-B-BAJK-0-N	1497-N2	1497-B-BASX-0-N
130	1497-N52	1497-C-BAJK-0-N	1497-N16	1497-C-BASX-0-N
200	1497-N55	1497-D-BAJK-0-N	1497-N5	1497-D-BASX-0-N
250	1497-N58	1497-E-BAJK-0-N	1497-N8	1497-E-BASX-0-N
350	1497-N61	1497-F-BAJK-0-N	1497-N11	1497-F-BASX-0-N
500	1497-N64	1497-G-BAJK-0-N	1497-N19	1497-G-BASX-0-N
750	—	1497-H-BAJK-0-N	1497-N34	1497-H-BASX-0-N
1000	—	1497-K-BAJK-0-N	1497-N37	1497-K-BASX-0-N
1600	—	—	1497-N40	1497-L-BASX-0-N
2000	—	—	1497-N43	1497-M-BASX-0-N
VA	Primary 600V (60 Hz)§			
63	1497-N47	1497-A-CXJK-0-N	1497-N29	1497-A-CX SX-0-N
80	1497-N50	1497-B-CXJK-0-N	1497-N3	1497-B-CX SX-0-N
130	1497-N53	1497-C-CXJK-0-N	1497-N17	1497-C-CX SX-0-N
200	1497-N56	1497-D-CXJK-0-N	1497-N6	1497-D-CX SX-0-N
250	1497-N59	1497-E-CXJK-0-N	1497-N9	1497-E-CX SX-0-N
350	1497-N62	1497-F-CXJK-0-N	1497-N12	1497-F-CX SX-0-N
500	1497-N65	1497-G-CXJK-0-N	1497-N20	1497-G-CX SX-0-N
750	—	1497-H-CXJK-0-N	1497-N35	1497-H-CX SX-0-N
1000	—	1497-K-CXJK-0-N	1497-N38	1497-K-CX SX-0-N
1600	—	—	1497-N41	1497-L-CX SX-0-N
2000	—	—	1497-N44	1497-M-CX SX-0-N

‡ Also rated 220/440V Primary, 110V Secondary 50 Hz, and 220/440V Primary, 24V Secondary 50 Hz.

§ Also rated 550V Primary, 110V Secondary 50 Hz, and 550V Primary, 24V Secondary 50 Hz.



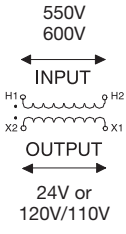
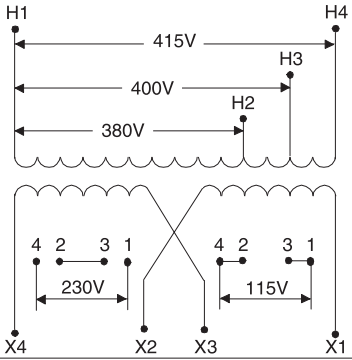
Note: Refer to page 4 for information on how to select a control circuit transformer.

Continuous VA	Cat. Nos.					
	Primary 208V (60 Hz)		Primary 240V (60 Hz)/220V (50 Hz)		Primary 240/480V (60 Hz) or 220/440V (50 Hz)	
						
Secondary 24V (60 Hz)	Secondary 120V (60 Hz)	Secondary 24V (60 Hz)/ 24V (50 Hz)	Secondary 120V (60 Hz)/ 110V (50 Hz)	Secondary 24V (60 Hz) or 24V (50 Hz)	Secondary 120V (60 Hz) or 110V (50 Hz)	
63	1497-A-HXJX-0-N	1497-A-HXDX-0-N	1497-A-AXJK-0-N	1497-A-AXSX-0-N	1497-A-BAJK-0-N	1497-A-BASX-0-N
80	1497-B-HXJX-0-N	1497-B-HXDX-0-N	1497-B-AXJK-0-N	1497-B-AXSX-0-N	1497-B-BAJK-0-N	1497-B-BASX-0-N
130	1497-C-HXJX-0-N	1497-C-HXDX-0-N	1497-C-AXJK-0-N	1497-C-AXSX-0-N	1497-C-BAJK-0-N	1497-C-BASX-0-N
200	1497-D-HXJX-0-N	1497-D-HXDX-0-N	1497-D-AXJK-0-N	1497-D-AXSX-0-N	1497-D-BAJK-0-N	1497-D-BASX-0-N
250	1497-E-HXJX-0-N	1497-E-HXDX-0-N	1497-E-AXJK-0-N	1497-E-AXSX-0-N	1497-E-BAJK-0-N	1497-E-BASX-0-N
350	1497-F-HXJX-0-N	1497-F-HXDX-0-N	1497-F-AXJK-0-N	1497-F-AXSX-0-N	1497-F-BAJK-0-N	1497-F-BASX-0-N
500	1497-G-HXJX-0-N	1497-G-HXDX-0-N	1497-G-AXJK-0-N	1497-G-AXSX-0-N	1497-G-BAJK-0-N	1497-G-BASX-0-N
750	1497-H-HXJX-0-N	1497-H-HXDX-0-N	1497-H-AXJK-0-N	1497-H-AXSX-0-N	1497-H-BAJK-0-N	1497-H-BASX-0-N
800	1497-J-HXJX-0-N	1497-J-HXDX-0-N	1497-J-AXJK-0-N	1497-J-AXSX-0-N	1497-J-BAJK-0-N	1497-J-BASX-0-N
1000	1497-K-HXJX-0-N	1497-K-HXDX-0-N	1497-K-AXJK-0-N	1497-K-AXSX-0-N	1497-K-BAJK-0-N	1497-K-BASX-0-N
1600	—	1497-L-HXDX-0-N	—	1497-L-AXSX-0-N	—	1497-L-BASX-0-N
2000	—	1497-M-HXDX-0-N	—	1497-M-AXSX-0-N	—	1497-M-BASX-0-N
With 2-Pole Primary and 1-Pole Secondary Top-Mounted Fuse Block * — Fuses Not Included						
63	1497-A-HXJX-3-N	1497-A-HXDX-3-N	1497-A-AXJK-3-N	1497-A-AXSX-3-N	1497-A-BAJK-3-N	1497-A-BASX-3-N
80	1497-B-HXJX-3-N	1497-B-HXDX-3-N	1497-B-AXJK-3-N	1497-B-AXSX-3-N	1497-B-BAJK-3-N	1497-B-BASX-3-N
130	1497-C-HXJX-3-N	1497-C-HXDX-3-N	1497-C-AXJK-3-N	1497-C-AXSX-3-N	1497-C-BAJK-3-N	1497-C-BASX-3-N
200	1497-D-HXJX-3-N	1497-D-HXDX-3-N	1497-D-AXJK-3-N	1497-D-AXSX-3-N	1497-D-BAJK-3-N	1497-D-BASX-3-N
250	1497-E-HXJX-3-N	1497-E-HXDX-3-N	1497-E-AXJK-3-N	1497-E-AXSX-3-N	1497-E-BAJK-3-N	1497-E-BASX-3-N
350	1497-F-HXJX-3-N	1497-F-HXDX-3-N	1497-F-AXJK-3-N	1497-F-AXSX-3-N	1497-F-BAJK-3-N	1497-F-BASX-3-N
500	1497-G-HXJX-3-N	1497-G-HXDX-3-N	1497-G-AXJK-3-N	1497-G-AXSX-3-N	1497-G-BAJK-3-N	1497-G-BASX-3-N

* Top-mounted fuse blocks are not available for transformers 750 VA and higher.

Bulletin 1497
Global Control Circuit Transformers
 Product Selection, Continued

Note: Refer to page 4 for information on how to select a control circuit transformer.

Continuous VA	Cat. Nos.		
	Primary 600V (60 Hz)/550V (50 Hz)	Primary 380V, 400V, 415V (50 Hz)	Primary 380V, 400V, 415V (50 Hz)
			
	Secondary 24V (60 Hz)/24V (50 Hz)	Secondary 120V (60 Hz)/110V (50 Hz)	Secondary 115V/230V (50 Hz)
63	1497-A-CXJK-0-N	1497-A-CXSX-0-N	1497-A-M4-0-N
80	1497-B-CXJK-0-N	1497-B-CXSX-0-N	1497-B-M4-0-N
130	1497-C-CXJK-0-N	1497-C-CXSX-0-N	1497-C-M4-0-N
200	1497-D-CXJK-0-N	1497-D-CXSX-0-N	1497-D-M4-0-N
250	1497-E-CXJK-0-N	1497-E-CXSX-0-N	1497-E-M4-0-N
350	1497-F-CXJK-0-N	1497-F-CXSX-0-N	1497-F-M4-0-N
500	1497-G-CXJK-0-N	1497-G-CXSX-0-N	1497-G-M4-0-N
750	1497-H-CXJK-0-N	1497-H-CXSX-0-N	1497-H-M4-0-N
800	1497-J-CXJK-0-N	1497-J-CXSX-0-N	1497-J-M4-0-N
1000	1497-K-CXJK-0-N	1497-K-CXSX-0-N	1497-K-M4-0-N
1600	—	1497-L-CXSX-0-N	1497-L-M4-0-N
2000	—	1497-M-CXSX-0-N	1497-M-M4-0-N
With 2-Pole Primary and 1-Pole Secondary Top-Mounted Fuse Block * — Fuses Not Included			
63	1497-A-CXJK-3-N	1497-A-CXSX-3-N	1497-A-M4-3-N
80	1497-B-CXJK-3-N	1497-B-CXSX-3-N	1497-B-M4-3-N
130	1497-C-CXJK-3-N	1497-C-CXSX-3-N	1497-C-M4-3-N
200	1497-D-CXJK-3-N	1497-D-CXSX-3-N	1497-D-M4-3-N
250	1497-E-CXJK-3-N	1497-E-CXSX-3-N	1497-E-M4-3-N
350	1497-F-CXJK-3-N	1497-F-CXSX-3-N	1497-F-M4-3-N
500	1497-G-CXJK-3-N	1497-G-CXSX-3-N	1497-G-M4-3-N

Transformers with 600V primary do not carry the CE mark.

* Top-mounted fuse blocks are not available for transformers 750 VA and higher.