

INCH-POUND

MIL-PRF-27/59D
w/AMENDMENT 2
8 April 2022
SUPERSEDING
MIL-PRF-27/59D
w/AMENDMENT 1
12 August 2016

PERFORMANCE SPECIFICATION SHEET

TRANSFORMERS, POWER, 100 VOLT AMPERES, 400 HZ

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the transformer described herein shall consist of this specification sheet and MIL-PRF-27.

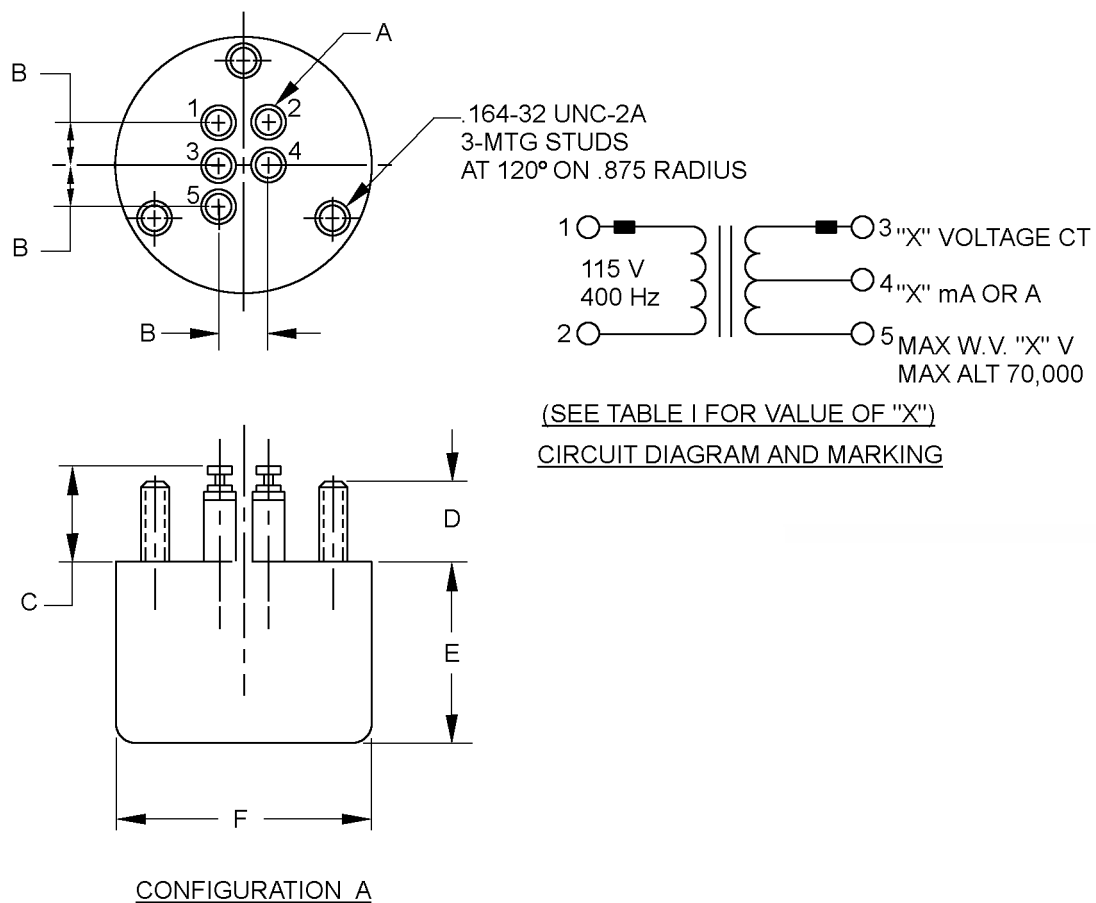
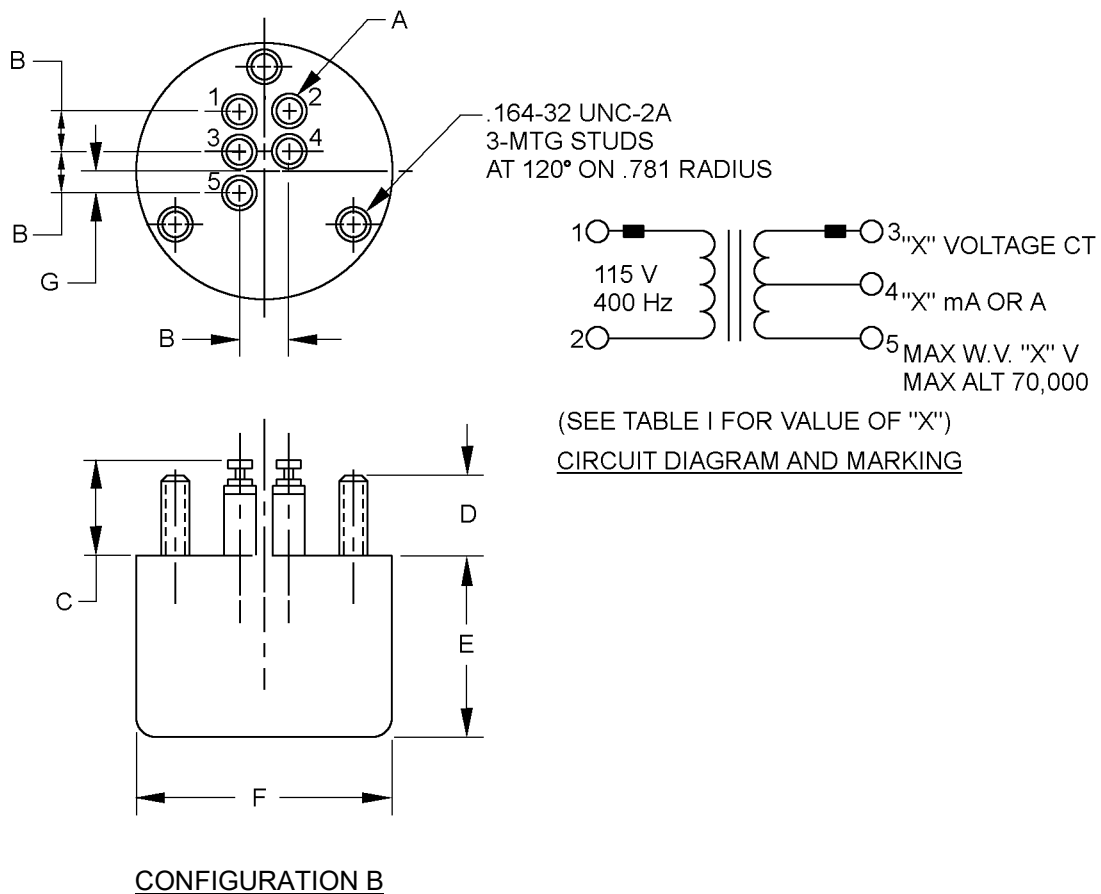


FIGURE 1. Dimensions and configurations

AMSC N/A
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FSC 5950





NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Tolerance on terminal position dimensions is ± 0.015 (0.38 mm).
4. Marking shall be on the side of the case.
5. When numbers in parentheses, i.e. (1-2), are used, they indicate the winding and the extreme terminals of the winding.
6. Secondary electrical values shall be marked as specified in table I, as applicable.

FIGURE 1. Dimensions and configurations – continued.

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Dim	Inches	mm
A	.250 DIA. TYP.	6.35 DIA. TYP.
B	.312	57.15 MTG. SQ.
C	.390 MAX	9.91 MAX
D	.344 $\pm$.031	8.74 $\pm$.078
E	2.000 $\pm$.031	50.80 $\pm$.078
F	2.250 $\pm$.031	57.15 $\pm$.078
G	.125	3.18

FIGURE 1. Dimensions and configurations – continued.

REQUIREMENTS: (When numbers in parentheses, such as (1-2) are used, they indicate the winding and the extreme terminals of the winding.)

Electrical ratings: See table I.

Primary voltage (1-2): 115 volts $\pm$ 10 percent, 400 Hz $\pm$ 5 percent.

Design and construction:

Dimensions and configuration: See figure 1.

Weight: 18.7 ounces, maximum.

Duty cycle: Continuous.

Case: Metal enclosed (Configuration A) or epoxy fiberglass enclosed (Configuration B).

Material: Steel (Configuration A) or epoxy fiberglass (Configuration B).

Altitude: 70,000 feet, maximum.

Operating temperature range: -55°C to +130°C.

Terminals: Feed thru.

Terminal height: .390 inch (9.91 mm), maximum.

Terminal strength: [MIL-STD-202-211](#), test condition A, 5 pounds.

Dielectric withstanding voltage:

At sea level: 2.8 times the maximum working voltage specified in table I.

At reduced barometric pressure: 1.25 times the maximum working voltage specified in table I.

Electrical characteristics:

No load: With 115 volts rms, 400 Hz across (1-2): Current in (1-2) shall not exceed 75 mA rms.

Rated load: With 115 volts, 400 Hz across (1-2) and a resistive load with current as specified in table I in (3-5), the voltage across (3-5) shall be as specified in table I.

Efficiency: 93 percent minimum at rated load.

Polarity: Additive with terminals 2 and 3 connected.

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Regulation: $\frac{\text{Voltage (no load)} - \text{Voltage (rated load)}}{\text{Voltage (rated load)}} \times 100$

shall not exceed 2.5 percent.

Phase shift: 1.0 electrical degree between primary and secondary voltage at rated load, maximum.

Temperature rise: 43°C, maximum with 115 volts, 400 Hz across (1-2) at an ambient temperature of 75°C.

Vibration: [MIL-STD-202-204](#), test condition D.

Marking location: See figure 1.

VERIFICATION

Extent of qualification

Qualification testing and approval to M27/49-44 A or B, M27/51-44 A or B, M27/53-44 A or B, M27/56-44 and M27/66-27 shall be sufficient to grant qualification approval to MIL-PRF-27/48 through MIL-PRF-27/66 inclusive, all parts.

Qualification testing and approval to M27/59-36 shall be sufficient to grant qualification approval to M27/59-01 through M27/59-36. Qualification testing and approval to M27/59-72 shall be sufficient to grant qualification approval to M27/59-37 through M27/59-72. Qualification testing and approval to M27/59-36 and M27/59-72 shall be sufficient to grant qualification approval to M27/59-01 through M27/59-72.

Part or Identification Number (PIN): M27/59-(dash number from table I).

TABLE I. Electrical ratings.

Dash No.	Secondary voltage (3-5) (V rms) ±3%	Secondary current (3-5) (amps rms)	Working voltage (V rms) (MAX)	Configuration
01	12	8.33	325	A
02	12.6	7.94	325	A
03	13	7.69	325	A
04	15	6.67	325	A
05	16	6.25	325	A
06	18	5.56	325	A
07	20	5.00	325	A
08	22	4.55	325	A
09	24	4.17	325	A
10	26	3.85	325	A
11	28	3.57	325	A
12	30	3.33	325	A
13	33	3.03	325	A
14	36	2.78	325	A
15	39	2.56	325	A
16	43	2.33	325	A
17	47	2.13	325	A
18	51	1.96	325	A
19	56	1.79	325	A
20	62	1.61	325	A
21	68	1.47	325	A
22	75	1.33	325	A
23	82	1.22	325	A
24	91	1.10	325	A
25	100	1.00	325	A
26	110	0.91	325	A
27	115	0.87	325	A
28	120	0.83	325	A
29	130	0.77	325	A
30	150	0.67	325	A
31	180	0.56	325	A
32	200	0.50	440	A
33	220	0.45	440	A
34	240	0.42	440	A
35	270	0.37	580	A
36	300	0.33	580	A

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TABLE I. Electrical ratings - Continued.

Dash No.	Secondary voltage (3-5) (V rms) ±3%	Secondary current (3-5) (amps rms)	Working voltage (V rms) (MAX)	Configuration
37	12	8.33	325	B
38	12.6	7.94	325	B
39	13	7.69	325	B
40	15	6.67	325	B
41	16	6.25	325	B
42	18	5.56	325	B
43	20	5.00	325	B
44	22	4.55	325	B
45	24	4.17	325	B
46	26	3.85	325	B
47	28	3.57	325	B
48	30	3.33	325	B
49	33	3.03	325	B
50	36	2.78	325	B
51	39	2.56	325	B
52	43	2.33	325	B
53	47	2.13	325	B
54	51	1.96	325	B
55	56	1.79	325	B
56	62	1.61	325	B
57	68	1.47	325	B
58	75	1.33	325	B
59	82	1.22	325	B
60	91	1.10	325	B
61	100	1.00	325	B
62	110	0.91	325	B
63	115	0.87	325	B
64	120	0.83	325	B
65	130	0.77	325	B
66	150	0.67	325	B
67	180	0.56	325	B
68	200	0.50	440	B
69	220	0.45	440	B
70	240	0.42	440	B
71	270	0.37	580	B
72	300	0.33	580	B

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Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-PRF-27, this document references the following:

MIL-PRF-27/48 MIL-PRF-27/49 MIL-PRF-27/50 MIL-PRF-27/51 MIL-PRF-27/52 MIL-PRF-27/53
MIL-PRF-27/54 MIL-PRF-27/55 MIL-PRF-27/56 MIL-PRF-27/57 MIL-PRF-27/58 MIL-PRF-27/60
MIL-PRF-27/61 MIL-PRF-27/62 MIL-PRF-27/63 MIL-PRF-27/64 MIL-PRF-27/65 MIL-PRF-27/66
MIL-STD-202-204, MIL-STD-202-211

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC
(Project 5950-2022-039)

Review activities:
Army - CR4, MI
Navy - AS, MC, OS
Air Force - 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.