

INCH-POUND

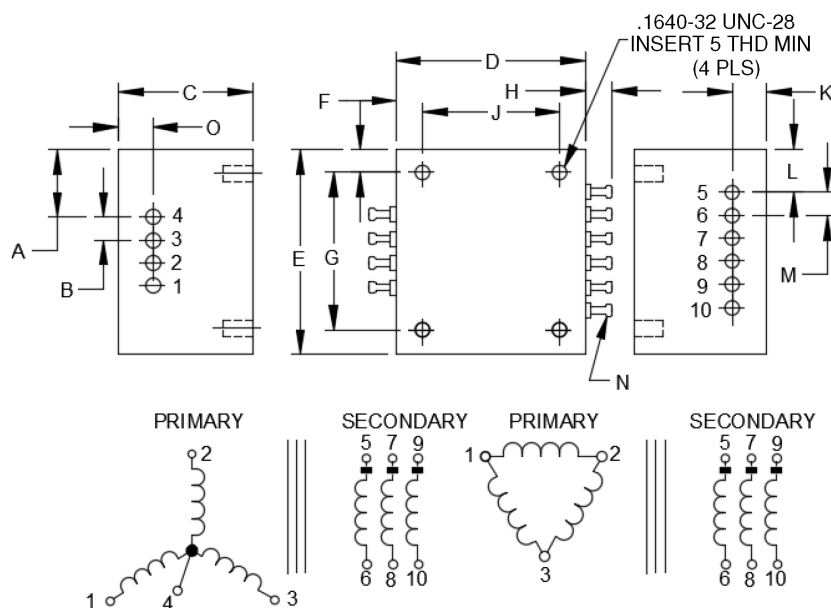
MIL-PRF-27/348C
AMENDMENT 2
16 October 2019
SUPERSEDING
AMENDMENT 1
MIL-PRF-27/348C
19 January 2018

PERFORMANCE SPECIFICATION SHEET

TRANSFORMERS, POWER, 270 VOLTAMPERES, 3-PHASE

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

The complete requirements for procuring the transformer described herein shall
consist of this document and the latest issue of specification MIL-PRF-27.



(For dash numbers 01 through 06)
Primary (For dash nos. 01 thru 06)
WYE, 115 V to Com 1,2,3 line 4 Com
WYE, 200 V L-L 1,2,3

PRIMARY (For dash nos. 07 thru 12)
Delta, 115 V L-L 1,2,3
PRIMARY (For dash nos. 13 thru 18)
Delta, 200 V L-L 1,2,3

(For dash numbers 07 through 18)
SECONDARY
WYE, L Com Connect 6-8-10, Load 5-6, 7-6, 9-6
DELTA, L-L Connect 6-7, 8-9 5-10, Load 5,7,9
WYE, L-L Connect 6-10, 8-10, Load 5,7,9

CIRCUIT DIAGRAMS

FIGURE 1. Dimensions and configurations.



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	Inches	mm
A	1.22	31.0
B	.40 TYP	10.2 TYP
C	1.99 MAX	50.55 MAX
D	3.04 MAX	77.2 MAX
E	3.69 MAX	93.7 MAX
F	.025	0.635
G	3.15 $\pm$.02	80.0 $\pm$ 0.5
H	.28	7.1
J	2.50 $\pm$.02	63.5 $\pm$ 0.5
K	.020	0.5
L	.82	20.8
M	.40 TYP	10.2 TYP
N	.090 DIA $\pm$.010	2.29 DIA $\pm$ 0.25
O	.020	0.5

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm$.04 (1.0 mm).
4. Marking shall be on top and side of case.
5. Terminal 4 is missing for dash nos. 07 thru 18.

FIGURE 1. Dimensions and configurations - Continued.

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

Electrical ratings:

Primary voltage at 400 $\pm$ 20 Hz

Wye connected (dash numbers 01 through 06).

(1-4): 115 V ac.

(2-4): 115 V ac.

(3-4): 115 V ac.

(1-2): 200 V ac.

(1-3): 200 V ac.

(2-3): 200 V ac.

Delta connected (dash numbers 07 through 12)

(1-2): 115 V ac.

(1-3): 115 V ac.

(2-3): 115 V ac.

Delta connected (dash numbers 13 through 18)

(1-2): 200 V ac.

(1-3): 200 V ac.

(2-3): 200 V ac.

Secondary voltage: See table I.

Secondary current: See table I.

Working voltage: 535 volts peak, maximum.

Design and construction:

Dimensions and configuration: See figure 1.

Duty cycle. Continuous.

Case: Epoxy fiberglass.

Terminals: Solderable turret type.

Height: 0.28 $\pm$ 0.040 inch (7.11 $\pm$ 1.02mm).

Diameter: 0.090 $\pm$ 0.010 inch (2.29 $\pm$ 0.25mm).

Weight: 2.8 pounds, maximum.

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

Altitude: 70,000 feet.

Terminal strength: MIL-STD-202-211, test condition A, 5 pounds.

Dielectric withstanding voltage (Secondary connected wye):

At atmospheric pressure (each winding): 1500 volts rms.

At barometric pressure (each winding): 670 volts rms.

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Electrical characteristics:

Rated load: With rated voltage across the primary at 400 Hz, the voltage across each winding of the secondary, wye connected, shall be as specified in Table I within ±5 percent at the current specified in Table I.

Regulation: Shall not exceed 10 percent when computed as follows:

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

TABLE I. Electrical ratings - secondary.

Dash numbers M27/348-	Wye (L-Com) 4 wire <u>1/</u> Delta (L-L) 3 wire <u>2/</u> (each winding)		Wye (L-Com) 4 wire <u>3/</u> (each winding)		DC resistance <u>1/</u> Wye (L-Com) (each winding)
		Load current		Load current	
	<u>Volts</u> <u>rms</u>	<u>Amperes</u> <u>rms</u>	<u>Volts</u> <u>rms</u>	<u>Amperes</u> <u>rms</u>	<u>Ohms</u> ±25%
01, 07, 13	12	7.50	20.8	4.33	.0142
02, 08, 14	15	6.00	26.0	3.47	.0232
03, 09, 15	20	4.50	34.6	2.60	.0383
04, 10, 16	28	3.22	48.5	1.86	.0843
05, 11, 17	48	1.88	83.1	1.09	.231
06, 12, 18	115	0.79	200	0.45	1.41

1/ Wye, line to common, connect (6-8-10), load (5-6), (7-6), and (9-6).

2/ Delta, line to line, connect (6-7), (8-9), and (5-10), load (5-7-9).

3/ Wye, line to line, connect (6-10), (8-10), load (5-7-9).

Efficiency (at rated load): Shall be a minimum of 90 percent when computed as follows with Secondary connected wye, L-Com

$$\frac{(\text{Secondary voltage})(\text{Secondary current})}{(\text{Primary phase voltage})(\text{Primary phase current})} \times 100$$

DC resistance (dash numbers 01 through 06):

Primary:

(1-4): 1.2 ohms ±25 percent.

(2-4): 1.2 ohms ±25 percent.

(3-4): 1.2 ohms ±25 percent.

DC resistance (dash numbers 07 through 12):

Primary:

(1-2): 0.80 ohms ±25 percent.

(2-3): 0.80 ohms ±25 percent.

(3-1): 0.80 ohms ±25 percent.

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DC resistance (dash numbers 13 through 18):

Primary:

(1-2): 2.18 ohms $\pm$ 25 percent.

(2-3): 2.18 ohms $\pm$ 25 percent.

(3-1): 2.18 ohms $\pm$ 25 percent.

Secondary: See table I.

Temperature rise: 50°C with rated voltage and current at 400 Hz, the secondary shall be wye connected at an ambient temperature of 80°C.

Shock (specified pulse): MIL-STD-202-213.

Marking location: See figure 1.

Part or Identifying Number (PIN): M27/348-(dash number from table I).

VERIFICATION:

Extent of qualification:

Qualification testing and approval to M27/344-07 and M27/349-18 shall be sufficient to grant qualification approval to MIL-PRF-27/344 through MIL-PRF-27/349 inclusive, all parts.

Qualification testing and approval to M27/348-18 shall be sufficient to grant qualification approval to M27/348-01 through M27/348-18.

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-STD-202-211 MIL-STD-202-213

Custodians:

Army - CR

Navy - EC

Air force – 85

DLA - CC

Preparing activity:

DLA - CC

Review activities:

Army – CR4, MI

Navy - AS, MC, OS

Air Force - 19

(Project 5950-2019-023)

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>.