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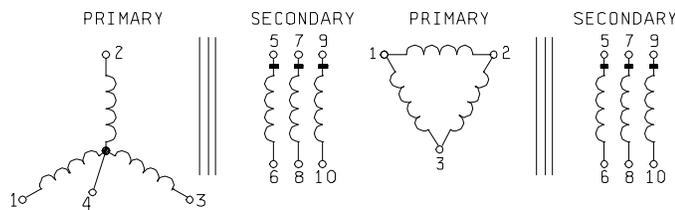
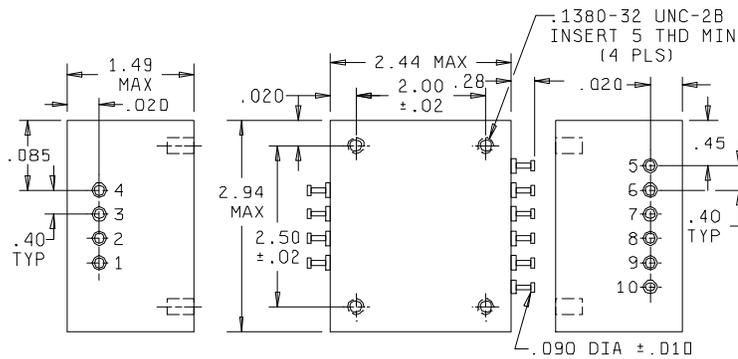
MIL-PRF-27/344B
 17 January 1986
 SUPERSEDING
 MIL-T-27/344A
 5 March 1984

PERFORMANCE SPECIFICATION SHEET

TRANSFORMERS, POWER, 90 VOLTAMPERES,
 3-PHASE, TYPE TF5S03YY

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

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



(For dash numbers 01 through 07)
 PRIMARY (For dash nos. 01 thru 07)
 WYE, 115 V to Com 1,2,3 Line 4 Com
 WYE, 200 V L-L 1,2,3

(For dash numbers 08 through 21)
 SECONDARY
 WYE, L Com Connect 5-8-10 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

INCH	mm
.010	0.25
.02	0.5
.090	2.29
.1380	3.505
.20	5.1
.28	7.1
.40	10.2
.45	11.4
.85	21.6
1.49	37.8
2.00	50.8
2.44	62.0
2.50	63.5
2.94	74.7

PRIMARY (For Dash nos. 08 thru 14)
 DELTA, 115 V L-L 1,2,3

PRIMARY (For Dash nos. 15 thru 21)
 DELTA, 200 V L-L 1,2,3

CIRCUIT DIAGRAMS

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.04 (1.0 mm).
4. Marking shall be on top and side of case.
5. Terminal 4 is missing for dash nos. 08 thru 21.

FIGURE 1. Dimensions and configuration.

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

Electrical ratings:

Primary voltage at 400 \pm 20 Hz:

Wye connected (dash numbers 01 through 07):

(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 08 through 14):

(1-2): 115 V ac.

(1-3): 115 V ac.

(2-3): 115 V ac.

Delta connected (dash numbers 15 through 21):

(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 .040 inch (7.11 \pm 1.02 mm).

Diameter: .090 \pm .010 inch (2.29 \pm 0.25 mm).

Weight: 1.3 pounds maximum.

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

Altitude: 70,000 feet maximum.

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

Dielectric withstanding voltage: (Secondary connected wye).

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

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

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 rating - secondary.

Dash numbers M27/344-	Wye (L-Com) 4 wire 1/ Delta (L-L) 3 wire 2/ (each winding)		Wye (L-L) 3 wire 3/ (each winding)		DC resistance 1/ Wye (L-Com) (each winding)
	Load current		Load current		
	Volts rms	Amperes rms	Volts rms	Amperes rms	Ohms $\pm 25\%$
01, 08, 15	5	6.00	8.66	3.47	.0147
02, 09, 16	12	2.50	20.8	1.45	.086
03, 10, 17	15	2.00	26.0	1.16	.135
04, 11, 18	20	1.50	34.6	0.87	.238
05, 12, 19	28	1.08	48.5	0.62	.510
06, 13, 20	48	0.63	83.1	0.36	1.39
07, 14, 21	115	0.26	200	0.15	8.37

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 07):

Primary:

(1-4): 6.8 ohms ± 25 percent.

(2-4): 6.8 ohms ± 25 percent.

(3-4): 6.8 ohms ± 25 percent.

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DC resistance (dash numbers 08 through 14):

Primary:

(1-4): 4.53 ohms \pm 25 percent.

(2-4): 4.53 ohms \pm 25 percent.

(3-4): 4.53 ohms \pm 25 percent.

DC resistance (dash numbers 15 through 21):

Primary:

(1-4): 12.5 ohms \pm 25 percent.

(2-4): 12.5 ohms \pm 25 percent.

(3-4): 12.5 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, method 213.

Marking location: See figure 1.

Part number: M27/344-(dash number from table I).

QUALIFICATION DATA:

Qualification testing and approval to M27/344-07 and M27/349-18 shall be sufficient to grant qualification approval to MIL-T-27/344 through MIL-T-27/349.

Qualification testing and approval to M27/344-21 shall be sufficient to grant qualification approval to M27/344-01 through M27/344-21.

Revision letters are not used to denote changes due to the extensiveness of the changes.

Custodians:

Army - ER
Navy - EC
Air Force - 85

Preparing activity:
Army - ER

Agent:
DLA - ES

Review activities:

Army - MI
Navy - OS
Air Force - 11, 17, 99
DLA - ES

(Project 5950-0658-13)

User activities:

Army - ME
Navy - AS, MC
Air Force - 19