**REQUIREMENTS:**

**GENERAL:**
- Design to be in conformance with Specification MIL-T-27 and ND 1035400 (for leads) as provided below.
- Supplier shall conform to the quality assurance provisions as contained in Specification ND 1035404, Class 2.
- Interpret drawing symbols, abbreviations and reference designations in accordance with government standards prescribed in MIL-D-70327.

**INSPECTION AND ACCEPTANCE:**
- Unit shall meet all requirements of Table 1.
- Sealing: Reference Paragraph 4.7.3.2.1 MIL-T-27.
- Dielectric strength: Apply 500 Volts (rms) between windings, Reference Paragraph 4.7.3.4 MIL-T-27.
- DC resistance: See Table 1, Reference Paragraph 4.7.9.3 MIL-T-27.

**PRIMARY IMPEDANCE:** Apply voltage and freq specified in Table 1 to leads (1-3). Secondary open.

**FREQUENCY RESPONSE:** Reference frequency 2000 CPS; see Test Circuit 1. Es shall be held constant over the frequency range, Reference Paragraph 4.7.9.15 MIL-T-27.

**NO LOAD VOLTAGE RATIO:** See Table 1. Measure with 2 Volts, 1000 CPS (1-3). Center tap location 1:1 ± 1.5%. Reference Paragraph 4.7.9.17 MIL-T-27.

**POLARITY:** Leads specified in Table 1 shall be like.

**POLARITY:** Reference Paragraph 4.7.9.14 MIL-T-27.

**MINIMUM MARKING:** The NASA drawing number, dash number, and revision letter, manufacturer's name or symbol, serial number, and lead identification shall be permanently and legibly marked on unit. Manufacturer's part or type number may appear on part or package.

**LEADS:** Nickel alloy 200-1/8 HARD, 0.020 ± .001. Leads shall conform to ND 1035400 except for Paragraph 3.3.2, finished lead diameter. A certificate of compliance with this requirement shall accompany each shipment.
**DESIGN REQUIREMENTS:**
The unit shall be capable of meeting all requirements of MIL-T-27 for grade 5, class R, life expectancy A, family per Table 1, in ambient temperature of 65°C.

The unit shall be capable of meeting all electrical requirements except where noted before, during, and after the following exposures:

- **High Temperature:** 71°C operating
- **Low Temperature:** -18°C operating
- **Vibration:** 10 to 2000 CPS, 20 G (per MIL-STD-202, Method 204A, Condition D)
- **Reduced Pressure:** 96 hours at a pressure of 10⁻⁴ mm of mercury.

DC UNBALANCE IN PRIMARY: PER TABLE 1
RATED POWER LEVEL: 50 MW
WORKING VOLTAGE BETWEEN WINDINGS AND FROM WINDINGS TO CASE: 275 Volts maximum instantaneous.

**SPECIAL CONDITIONING, 100% (BY MANUFACTURER):**
Transformer shall be temperature cycles for 5 cycles per MIL-STD-202, Method 102A except that the temperatures shall be -55°C, -25°C and +105°C and exposure time shall be 15 minutes at each temperature. During the last cycle the unit shall be tested for continuity at each of the ambient conditions. After stabilization at room temperature unit shall pass normal inspection tests.

**FREQUENCY RESPONSE TEST CIRCUIT**

- **Frequency Response:**
  - Test Conditions: 50 MΩ primary to 900 MΩ secondary
  - Bandwidth: 10 KHz to 3 MHz

**TABLE 1**

<table>
<thead>
<tr>
<th>NASA PART NUMBER</th>
<th>DC Resistance ± 5%</th>
<th>Primary Impedance (Minimum)</th>
<th>Test Circuit</th>
<th>Frequency Response</th>
<th>Polarity</th>
<th>No Load Voltage Ratio</th>
<th>Max. DC MA Unbalance</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010291-1</td>
<td>100 Ω</td>
<td>5000 (Ω)</td>
<td>500 Ω</td>
<td>± 5 %</td>
<td>± 5 %</td>
<td>1 and 4</td>
<td>1.50 ± 1</td>
<td>3</td>
</tr>
<tr>
<td>-2</td>
<td>100 Ω</td>
<td>5000 (Ω)</td>
<td>500 Ω</td>
<td>± 5 %</td>
<td>± 5 %</td>
<td>1 and 4</td>
<td>7.06 ± 1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**REVC THIS SHEET ADDED**

**LIST OF MATERIALS**

LESS UNLESS OTHERWISE SPECIFIED

**INSTRUMENTATION LAB**

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

**TRANSFORMER, AUDIO**

**SPECIFICATION CONTROL DRAWING**

**CODE DENT NO.**

**NASA DRAWING NO.** C 1010291