REQUIREMENTS:

1. GENERAL:
   A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
   B. SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.
   C. UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002046 UNLESS MODIFIED OR AMENDED BY DESIGN REQUIREMENTS OF THIS DRAWING. ALL ELECTRICAL REQUIREMENT LEVELS AS LISTED ON THIS DRAWING SHALL TAKE PRECEDENCE OVER THOSE LISTED IN ND 1002046. THE CLASSIFICATION OF THIS RELAY SHALL BE GENERAL PURPOSE.
   D. THIS UNIT SHALL MEET ALL APPLICABLE PARAGRAPHS OF MIL-R-5757 WITH THE FOLLOWING QUALIFICATIONS.
   E. PRESERVATION, PACKAGING, PACKING AND CONTAINER MARKING PER ND 1002215, CLASS 1, CODE 1. (THERE ARE NO CRITICAL FUNCTIONING OR CLOSELY TOLERANCED SURFACES AS DESCRIBED IN ND 1002215).

2. INSPECTION AND ACCEPTANCE:
   A. MECHANICAL REQUIREMENTS:
      (1) LEAD MATERIAL: SHALL BE THE LENGTH SPECIFIED AND SHALL BE IRON NICKEL ALLOY, COPPER CLAD, ANNEALED, GOLD PLATED (DUMET) WIRE LEADS PER ND 1015401, A CERTIFICATE OF COMPLIANCE WITH THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
      (2) MARKINGS: UNIT SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE FOLLOWING:
         - MANUFACTURER'S NAME OR SYMBOL
         - MANUFACTURER'S PART NUMBER
         - NASA DRAWING NUMBER, DASH NUMBER, AND REVISION LETTER
         - RATED COIL VOLTAGE
         - DATE CODE
         - COIL RESISTANCE
         - CIRCUIT DIAGRAM
      (3) SEALING: (100% INSPECTION) SEAL TEST III EXCEPT THE MAXIMUM LEAK RATE SHALL BE 10^-6 cc/SEC.
   B. ELECTRICAL REQUIREMENTS:
      (1) PULL-IN VOLTAGE: SEE TABLE 1.
      (2) DROP-OUT VOLTAGE: SEE TABLE 1.
      (3) CONTACT RESISTANCE: (100% INSPECTION) .05 OHM MAXIMUM BEFORE AND DURING LIFE (.10 OHM MAXIMUM AFTER LIFE) WHEN MEASURED WITH 100 MILLIAMPS FROM A SIX (6) VOLT DC SOURCE. (THE CONTACTS SHALL NOT SWITCH THE MEASURING LOAD).
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA; REVISIONS.

An invention that may in any way be related thereto, PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS: (CONTINUED)

(4) DIELECTRIC STRENGTH: SHALL WITHSTAND FOR ONE MINUTE THE FOLLOWING POTENTIALS AT THE INDICATED LEVELS, WITHOUT ARCING, DAMAGE, OR BREAKDOWN.

(a) SEA LEVEL: 1000 VOLTS RMS 60 CPS BETWEEN,
1. CONTACT TERMINALS AND COIL TERMINALS,
2. CONTACT TERMINALS AND CASE,
3. CIRCUITS
(b) SEA LEVEL: 500 VOLTS RMS 60 CPS BETWEEN,
1. OPEN CONTACT TERMINALS OF EACH CIRCUIT (RELAY BOTH ENERGIZED AND DEENERGIZED),
2. COIL TERMINALS AND CASE,
(c) ALTITUDE: 300 VOLTS RMS 60 CPS BETWEEN,
1. ALL TERMINALS AND CASE,
2. ALL TERMINALS

(5) INSULATION RESISTANCE: 1000 MEGOHMS MINIMUM, USING A 500 VOLT DC TEST POTENTIAL APPLIED BETWEEN
(a) COIL TERMINALS, COMMONLY CONNECTED, AND CASE —
(b) EACH NORMALLY OPEN CONTACT AND CASE
(c) EACH MOVABLE, OR "COMMON", CONTACT AND CASE (WITH COIL DEENERGIZED)
(d) ALL CONTACT TERMINALS, COMMONLY CONNECTED, AND THE COIL TERMINALS.

(6) OPERATE TIME: 5 MILLISECONDS MAXIMUM OVER THE AMBIENT TEMPERATURE RANGE.

(7) RELEASE TIME: 5 MILLISECONDS MAXIMUM OVER THE AMBIENT TEMPERATURE RANGE.

(8) CONTACT BOUNCE TIME: 2 MILLISECONDS MAXIMUM OVER THE AMBIENT TEMPERATURE RANGE. (CONTACT BOUNCE TIME IS NOT TO BE INCLUDED IN OPERATE AND RELEASE TIME).

3. DESIGN REQUIREMENTS:

A. AMBIENT TEMPERATURE RANGE: -65°C TO +125°C

B. COIL RESISTANCE: SEE TABLE 1

C. LIFE: WHEN TESTED AT ANY OF THE ABOVE RATINGS, OR BETWEEN THE MAXIMUM RATING AND THE MINIMUM RATING, FOR 100,000 CYCLES, OVER THE AMBIENT TEMPERATURE RANGE, THERE SHALL BE NO FAILURES AS DEFINED IN ND 1002046 AND THERE SHALL BE NO CONTACT RESISTANCE READING GREATER THAN 1 OHM DURING ANY CYCLE.

D. TERMINAL STRENGTH: 3 LBS MINIMUM AXIAL PULL

E. ENVIRONMENTAL LEVELS:

(1) TEMPERATURE;
(a) HIGH: +125°C
(b) LOW: -65°C
(2) THERMAL SHOCK: -65°C TO +125°C
(3) VIBRATION: 10-2000 CPS, 20 G
(4) SHOCK: 50 G, 11 MILLISECONDS

REVISED PER TORR 16051
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER. AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IMposing ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS: (CONTINUED)

(5) ACCELERATION: 20 G
(6) ALTITUDE: 70,000 FEET
(7) HUMIDITY: 100 CYCLES
(8) GALT SPRAY TESTS AS REFERENCED IN MIL-R-5757 ARE NOT APPLICABLE.

F, CONTACT FORM AND SWITCHING ACTION: 2 FORM C CONTACTS
(2 PDT)
G, COIL VOLTAGE: SEE TABLE
H, CONTACT RATINGS: (MAXIMUM AMPERES PER POLE) NORMALLY OPEN OR NORMALLY CLOSED
J, COIL DISSIPATION: 1.5 WATTS MAX AT 125°C
K, CASE MATERIAL: COPPER-NICKEL

4, SPECIAL CONDITIONING:
A, MISS TEST:
(1) THE MANUFACTURER SHALL SUBJECT ALL RELAYS TO 5000 OPERATIONS UNDER THE FOLLOWING CONDITIONS:
(a) 30 MICROAMPERES MAXIMUM CURRENT
(b) 50 MILLIVOLTS MAXIMUM VOLTAGE
(c) 50 OHMS MAXIMUM CONTACT RESISTANCE PER CONTACT PAIR,
(d) RATED COIL VOLTAGE APPLIED
(e) 5 CPS MAXIMUM SWITCHING SPEED
(2) CONTACT RESISTANCE, FULL-IN AND DROP-OUT VOLTAGE SHALL BE MEASURED BY THE MANUFACTURER AFTER THE 5000 CYCLE TEST AND JUST PRIOR TO SHIPMENT, CERTIFICATION OF THESE MEASUREMENTS SHALL BE FURNISHED TO THE USER, THE MANUFACTURER SHALL ALSO FURNISH THE USER A TABULATION SHOWING THE NUMBER OF RELAYS SUBJECTED TO THE 5000 CYCLE TEST, THE NUMBER OF RELAYS FAILING DURING THE 5000 CYCLE TEST AND THE TIME OR CYCLE TO FAILURE. ONE COPY OF THIS INFORMATION SHALL BE FURNISHED WITH EACH SHIPMENT OF PARTS.

NOTES:
1, INDUCTIVE LOAD LIMITED BY \( \leq 0.008 \text{ sec} \), \( R_w = 100 \text{ M} \Omega \) POWER FACTOR 50% FOR AC
2, ALL AC RATINGS ARE GIVEN FOR UNGROUNDED CASE ONLY.
<table>
<thead>
<tr>
<th>TABLE I</th>
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<tbody>
<tr>
<td>NOMINAL RATED COIL VOLTAGE (VOLTS DC)</td>
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THE PART NUMBER IS THE DRAWINGS NUMBER PLUS THE APPLICABLE DASH NUMBER.

DIAGRAM

Schematic B
CONTACTS SHOWN DE-ENERGIZED (NUMBERS FOR REF ONLY)

INSTRUMENTATION LAB
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY ARMATURE (GENERAL PURPOSE)

SPECIFICATION CONTROL DRAWING

Manned Spacecraft Center
Houston, Texas

Relay Armature (General Purpose)