**Requirements:**

1. **General:**
   - A. Interpreting drawing in accordance with standards prescribed by MIL-D-7037.
   - B. Supplier shall confirm to the quality assurance provisions contained in ND 1015464, class 2.
   - C. Units shall be capable of meeting all qualification requirements of ND 100206.
   - D. Parts marking: Parts shall be permanently and legibly marked, in accordance with ND 100206, with the manufacturer's name and/or symbol, lot code or number, terminal identification and major part number (drawing number) and revision letter.
   - E. Preparation for delivery shall be in accordance with ND 100211, class 2, code 1.
     - (1) Marking of shipping containers shall conform to the marking of unit and intermediate packages and the method of marking as specified in ND 1002215.

2. **Acceptance and Inspection:**
   - (1005)
     - A. Mechanical and physical properties:
       - (1) Dimensions: As delineated herein.
       - (2) Surface roughness: Unless otherwise specified.
       - (3) Marking: As specified in notes 1, 10, 11, and 12. ND 100211, class 2, the overall height of characters shall be .150. The line stroke width shall be .025/.070. Legend shall be centered on display face plate. Full shall be black color. No. 37038 per MIL-STD-595 and shall be opaque when legend is energized.

**Electrical Characteristics:**

- (1) Power dissipation:
  - Yellow displays: 0.180 amperes @ 508 AT 5.0 ± 0.1 VDC
  - White displays: 0.225 amperes @ 508 AT 5.0 ± 0.1 VDC

- (2) Dielectric withstanding voltage: 200 ± 25 VAC at 60 cps for 5 seconds between adjacent terminals.

- (3) Insulation resistance: 100 MΩ minimum at 100 VDC at sea level, 70°F ± 10°F, 50% RH maximum, between terminal and other terminals and between any terminal and the case per MIL-STD-202, method 303.

- (4) Brightness: Legends shall have a brightness level of 15 ± 3 foot-candles at 0.05V and 15 ± 3 foot-candles at 0.05V.

- (5) Isolation: There shall be no light leakage from unit to unit, legend areas. Paint shall not be deemed an adequate light block.

**List of Materials:**

<table>
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<tr>
<th>Material or Description</th>
<th>Notes</th>
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<tbody>
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**NOTE:**

- Application
- Dash: Applicable
- Request: Identification No. or notes description no.

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<tr>
<td>B</td>
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**DRAWN BY:**

| M.T. Instrumentation Lab Cambridge, Mass | Manned Spacecraft Center Houston, Texas |

**CHECKED BY:**

| M.T. Instrumentation Lab Cambridge, Mass | Manned Spacecraft Center Houston, Texas |

**REVISIONS:**

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**NOTE:**

- Requirement: The legend character height shall be .150. The line stroke width shall be .025/.070. Legend shall be centered on display face plate. Full shall be black color. No. 37038 per MIL-STD-595 and shall be opaque when legend is energized.
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA REVISIONS ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES THEREFORE INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, DESIGNED, OR APPROVED AND/OR PROVIDED THE DATA OR INFORMATION THAT IS TO BE UTILIZED FOR THE PURPOSE FOR WHICH THE DATA IS HEREIN PRODUCED, CONVEYS ANY MISCONCEPTION OR PERMISSION TO MANUFACTURE, USE, OR SELL THE DATA OR INFORMATION THEREFROM.

REQUIREMENTS: (CONTINUED)

3. DESIGN:
   A. OPERATING LIFE: 4000 HOURS MINIMUM AT POWER DISSIPATION PER NOTE 3.B.(1). AT 70°F ±1°F AMBIENT TEMPERATURE.
   B. MATERIAL: ALL MATERIAL SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF THIS DESIGN AND EXHIBIT NO TOXICITY.
      (1) PLASTIC FACE PLATE: ACRYLIC SHEET PLASTIC PER MIL-P-5425, FINISH A.
      (2) CASE: ALUMINUM ALLOY.
   C. FINISHES:
      (1) ALUMINUM CASE: CHROMATE TREAT PER MIL-C-5541.
      (2) PAINT SURFACES MARKED 'A' AND TOP BORDER AREA GREY EPOXY ENAMEL PER ND1002277 USING ID08808-1.
      (3) FINAL COAT SURFACES MARKED 'A' PER ND1002277 USING ID02543-003.
D. TERMINALS AND INSULATORS: SHALL MEET THE REQUIREMENTS OF ND100256.
E. PANEL COLORS: [REF NOTE 2.A.(24)] YELLOW COLOR TO BE AVIATION YELLOW AND WHITE COLOR TO BE AVIATION WHITE PER MIL-C-25050. COLOR COORDINATES SHALL REMAIN WITHIN THE LIMITS OF THE SPECIFIED AVIATION COLORS WHEN ENERGIZED FROM 5.0 THRU 3.0 VOLTS. THE X-COORDINATE FOR THE AVIATION WHITE DISPLAYS SHALL NOT EXCEED X = .560 WHEN ENERGIZED FROM 5.0 THRU 2.0 VOLTS.
F. LAMPS: EACH OF THE 10 LEGEND AREAS SHALL BE ILLUMINATED BY 3 LAMPS, PARALLEL WIRED AS SHOWN IN THE SCHEMATIC. YELLOW DISPLAY LAMPS TO BE MS 24367-6890, WHITE DISPLAY LAMPS TO BE MS 24367-7153.
G. WHEN MOUNTED ON A SUITABLE FIXTURE, THE UNIT SHALL BE CAPABLE OF WITHSTANDING A PRESSURE OF 15 PSI OF HELIUM APPLIED AGAINST THE 3/8" AREA, WHEN THE EXTERNAL PRESSURE IS REDUCED TO 1" HG EQUIVALENT PRESSURE; WHEN SUBJECTED TO THIS DIFFERENTIAL PRESSURE, THE UNIT SHALL EXHIBIT A LEAK RATE OF NO MORE THAN 1 X 10^-5 ATM CC/SEC OVER THE TEMPERATURE RANGE OF -10°C TO +82°C.
H. NOTE: THIS UNIT IS TO BE MOUNTED ON A HEAT SINK WHEN LEGENDS ARE ENERGIZED FOR PERIODS LONGER THAN TWO (2) MINUTES. A SATISFACTORY HEAT SINK CAN BE AN ALUMINUM OR BRASS PLATE 10" X 10" X 1/8" WITH A CENTERED RECTANGULAR OPENING FOR MOUNTING THE UNIT.

MATERIAL

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. RESISTOR VALUES ARE IN OHMS. CAPACITOR VALUES ARE IN UFD. TOLERANCES ON FRACTIONS DECIMALS ANGLES 45° DO NOT SCALE THIS DRAWING. SPECIFICATION CONTROL DRAWING.

INDICATOR, ALARM

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSTRUMENTATION LAB
CAMBRIDGE, MASS.

CHECKED

APPROVED

DATE

DRAWING NO.

SPECIFICATION DRAWING

LIST OF MATERIALS

MATERIAL IDENTIFYING NO.

REMARKS

NEW PARTS

APPROVED

CODE IDENT NO.

SIZE

DRAWING NO.

REFERENCES

MATERIAL

APPLICATION

SEE NOTE

MIT

WALTER

G. J.

APP. MIT

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APP. DAD

APP. NIN

APP. SIM

APP. MD

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