

INCH POUND
MIL-DTL-3971E
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DETAIL SPECIFICATION

METERS, TIME TOTALIZING, NON-HERMETICALLY SEALED, ELECTRICAL: GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers the general requirements for electrically operated non-hermetically sealed meters that automatically measure, and cumulatively register the total operating or idle time of the circuit, machine or system to which connected.

1.2 Classification. Time totalizing meters of the following types and grades are covered by this specification:

Type I - Direct current (dc), total capacity: 10,000 hours

Type II - Alternating current (ac), total capacity, as follows:

Class 1 - 120V, 60 hertz (Hz) - 100,000 hours

Class 2 - 120V, 400Hz - 10,000 hours

Grade A - With electromagnetic compatibility

Grade B - Without electromagnetic compatibility

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: Defense Supply Center Richmond, Standardization Program Branch, ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 6645

DISTRIBUTION STATEMENT A. Approved for public release: distribution is unlimited.

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

- | | | |
|----------------|---|----------------------------------------------------------------------------------------------------------------------------------------------|
| MIL-DTL-3971/1 | – | Meters, Time Totalizing, Non-Hermetically Sealed, Electrical; Type I, 10-40V or 40-130V or 10-130V; Grades A and B, 2 Hole and 3 Hole Flange |
| MIL-DTL-3971/2 | – | Meters, Time Totalizing, Non-Hermetically Sealed, Electrical; Type II, 120V, 60Hz and 120V, 400Hz Grades A and B, 2 Hole and 3 Hole Flange |

STANDARDS

DEPARTMENT OF DEFENSE

- | | | |
|-------------|---|-----------------------------------------------------------------------------------------------------------------------------------|
| MIL-STD-202 | – | Test Method Standard Electronic and Electrical Component Parts |
| MIL-STD-461 | – | Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment (Supercedes MIL-STD-462) |
| MIL-STD-810 | – | Environmental Test Methods and Engineering Guidelines |
| MIL-STD-889 | – | Dissimilar Metals |

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

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AMERICAN SOCIETY FOR QUALITY CONTROL

ANSI/ASQC Z1.4 – Sampling Procedures and Tables for Inspection by Attributes (DoD adopted)

(Application for copies should be addressed to the American Society for Quality Control, 611 East Wisconsin Avenue, Milwaukee, Wisconsin 53202.)

2.4 Order of precedence. If there is conflict between the text of this document and the references cited herein (except for related associated specifications or specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between requirements of this specification and the detailed specification, the latter shall govern.

3.1.1 Reference to detail specification. For the purpose of this specification, when the terms “specified” or “as specified” are used without reference to a specific document, the intended reference is to the detailed specification.

3.2 Qualification. Time totalizing meters furnished under this specification shall be products that are authorized for listing on the applicable qualified products list before contract award (see 4.2 and 6.3).

3.2.1 Re-evaluation. At the option of the qualifying activity, meters listed on the applicable Qualified Products List shall be re-evaluated for long term accuracy every 24 months (see 4.2.3).

3.3 Materials. All materials shall be of uniform quality and free of defects which might impair the functioning or accuracy of the meters. Material which is not specified by a definite material specification shall be of a composition and quality that will enable the meters to meet all applicable requirements of this specification.

3.3.1 Fungus-proof materials. Materials that are nutrients for fungi shall not be used where it is practical to avoid them. Where used, they shall be treated with a certified fungicidal agent.

3.3.2 Protective treatment. All parts of the meter, except those whose proper function would be detrimentally affected, shall be protected by a certified finish capable of resisting corrosion, crazing, or cracking due to fuel, salt spray, common solvents or atmospheric conditions which are likely to be encountered in storage or service.

3.3.3 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall not be used in intimate contact with each other unless suitable protection against electrolytic corrosion is certified.

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3.4 Design and construction. Meters shall be in accordance with the applicable detailed specification and the requirements specified herein. The design shall assure that parts will not work loose in service. The meters shall be constructed to withstand the normal hazards incident to shipping, storage and service.

3.4.1 Case. The dimensions of the case shall be in accordance with MIL-DTL-3971/1 and /2.

3.4.2 Finish. Aluminum, when utilized on exposed portions of the meter, shall be anodized. Visible parts of the meter, as viewed when mounted, shall be finished with a durable non-reflecting black. A black finish on the case is optional.

3.4.3 Window. The window shall be clear, uncolored, and free of bubbles, scratches, or other imperfections which may interfere with the reading of the meter. The window shall show no evidence of damage when tested in accordance with 3.5.4.

3.4.4 Grounding. Cases shall not be externally grounded.

3.4.5 Elapsed time indicator. The elapsed time indicator shall be a drum register type having a total range of 10,000 or 100,000 hours, as specified in 1.2.

3.4.6 Running indicator.

3.4.6.1 Type I. A running indicator shall be clearly visible. The indicator shall, within 30 seconds after the meter is energized, be evidence that the meter is operating.

3.4.6.2 Type II. A running indicator is optional. If a running indicator is used, it shall be as specified in 3.4.6.1.

3.4.7 Terminals. Meters shall be provided with terminals for connecting electrical wires to the meter. Terminals for soldered connections shall be hot-tin dipped or solder coated to facilitate soldering. Terminals shall be capable of carrying specified overload current and voltage (see 6.2).

3.4.7.1 Terminal polarity. Type I meters, which are polarity sensitive, shall have the positive terminal identified as such by marking on that portion of the case adjacent to that terminal.

3.4.7.2 Terminal location. The terminals (two) shall be located on the back of the case and positioned in a manner that will not interfere with mounting of the meter.

3.4.8 Mounting hardware. Machine screws, nuts and either split-ring lock-washers or internal tooth lock washers shall be furnished with each meter. The machine screws shall be one-half inch in length full thread. The hardware shall have a non-reflecting black finish.

3.4.9 Coils. The coils shall be properly insulated from the case and other ground parts.

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3.4.10 Insulation resistance. The insulation resistance between the terminals and the case shall exceed 100 megohms.

3.4.11 Electromagnetic compatibility (mechanical designs only). Grade A meters shall conform to the electromagnetic compatibility requirements for class IIC as specified in MIL-STD-461.

3.4.12 Dielectric strength. Meters shall be capable of withstanding the application of a higher than normal operating voltage and frequency for 60 seconds between insulated portions without damage or flashover, as specified in MIL-DTL-3971/1 and /2.

3.4.13 Weight. The weight of the meter shall not exceed that specified in MIL-DTL-3971/1 and /2.

3.5 Performance. Meters shall meet all performance requirements at the operating voltage, or over the operating voltage range, as specified.

3.5.1 Starting and stopping. Meters shall be capable of starting and stopping within the time limitations and at the temperatures specified in MIL-DTL-3971/1 and /2.

3.5.2 Operating position. Meters shall be capable of operating in any position within an accuracy of ± 1 percent of total elapsed time at $23^{\circ}\text{C} \pm 10^{\circ}\text{C}$ when energized at rated nominal voltage frequency as specified

3.5.3 Vibration.

3.5.3.1 Accuracy. Meters shall remain accurate within ± 1 percent of actual elapsed time during normal vibration and for 24 hours following extended vibration endurance.

3.5.3.1.1 Normal vibration. Meters shall be capable, while energized, of being vibrated to 4 sweeps, each of 15 minutes, in 3 mutually perpendicular axes with the frequency varied logarithmically from 7 to 500 Hz and return to 7 Hz. The amplitude from 7 to 57 Hz shall be 0.06-inch double amplitude (maximum total excursion) and from 57 to 500 Hz the acceleration shall be $10g$'s.

3.5.3.1.2 Extended vibration endurance. Following the vibration specified in 3.5.3.1.1 the meters shall be capable, while energized at rated voltage and frequency as specified, of withstanding extended vibration with an input acceleration level of $2.0g$'s, under the following conditions:

<u>Frequency (Hz)</u>	<u>Axis</u>	<u>Time</u>	<u>Temperature</u>
60	Vertical	10 hours	$-32^{\circ}\text{C} \pm 2^{\circ}\text{C}$
60	Vertical	30 hours	$+23^{\circ}\text{C} \pm 10^{\circ}\text{C}$
60	Vertical	10 hours	$+68^{\circ}\text{C} \pm 2^{\circ}\text{C}$

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3.5.4 Shock.

3.5.4.1 Standard shock. Meters shall be accurate within ± 1 percent of actual elapsed time and show no evidence of damage (excluding flange) after an uncontrolled drop from a height of two feet on to a block of hard wood.

3.5.4.2 High impact shock. Meters shall be accurate within ± 1 percent of actual elapsed time and show no evidence of damage after being subjected to 2 shocks in each direction along the 3 mutually perpendicular axes of the meter (total of 12 shocks). The shock pulse shape shall be terminal-peak saw tooth with a peak value of 75g's with a nominal duration of 6 milliseconds.

3.5.5 Temperature cycling. Meters shall be accurate within ± 1 percent of actual elapsed time and show no evidence of damage while operating for 6 hours (total 18 hours) at each of the following temperatures:

- a. $+68^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- b. $-4^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- c. $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$

3.5.6 Moisture resistance. Meters shall be accurate within 1 percent of actual elapsed time. They shall show no evidence of corrosion or damage after being subjected to 10 cycles, each of 24 hours duration, of humidity varying from 80 to 98 percent relative humidity and temperature ranging from $+65^{\circ}\text{C}$ to -10°C . At the completion of any 5 of the first 9 cycles, the meters shall be vibrated 15 minutes, at ambient temperature, using a simple harmonic motion having an amplitude of 0.03-inch (0.06 maximum total excursion), the frequency being varied uniformly between 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately one minute.

3.5.7 Salt spray. Meters shall be accurate within ± 1 percent of actual elapsed time. They shall show no evidence of damage to the finish after being subjected to 48 hours of an atomized 5 percent salt solution having a specific gravity between 1.0268 and 1.0413 and a pH between 6.5 and 7.2 between 33.9°C and 36.1°C .

3.5.8 Power supply tolerance. While operating, meters shall not be damaged when subjected to voltages and frequencies at the upper and lower limits of the specified rating for a period of one-half hour in any four hour period. The meters shall resume proper operation when the voltage and frequency return to the specified nominal.

3.5.9 Water resistance. Meters shall be capable of rejecting the entry of water at a depth of 6.25 feet for 15 seconds at $+22^{\circ}\text{C} (\pm 5^{\circ}\text{C})$.

3.5.10 Long term accuracy. Meters shall be capable of operating continuously for 2500 hours, with application of nominal specified voltage, within an accuracy of ± 1 percent at $+23^{\circ}\text{C} (\pm 10^{\circ}\text{C})$.

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3.6 Identification marking. The identification marking shall be as specified in figure 1.

Type	Grade	Part No.	Date
Frequency and Voltage		Mfr's Name	
Federal Stock No.		Contract or Purchase Order No.	

FIGURE 1. Identification marking.

Note: The part number, date, frequency and voltage, manufacturer's name, federal stock number and contract or purchase order number may be applied without their descriptive titles. Identification markings which appear on the dial need not be duplicated on the case.

3.6.1 Application. The marking shall be applied on the side or rear of the case and shall be legible after withstanding environmental requirements of 3.5.5, 3.5.6 and 3.5.7.

3.6.2 Acceptance date. The marking shall include the date of acceptance of the meter by the Government. The marking for the month shall be the first three letters and the marking for the year shall be the last two numbers, e.g., December 2000 is Dec 00.

3.7 Workmanship. Workmanship shall be of a quality consistent with the highest commercial production standards and practices. The meters shall be free of loose components, rust, scratches, burrs, sharp edges, chips, and unnecessary oil or foreign materials.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 Qualification inspection. Qualification inspection of meters shall be in conformance with the qualification tests listed in table I for the types and grades as specified..

4.2.1 Samples. Four meters shall be subjected to qualification inspections. The samples shall be representative of the meters produced under order or contract.

4.2.2 Failure. Failure of any sample meter to pass all the inspections or tests listed in table I is cause for rejection of all samples submitted for qualification at one time.

4.2.3 Qualification re-evaluation. At the option of the qualifying activity, retention of qualification approval is subject to testing of long term accuracy every 24 months.

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TABLE I. Qualification inspection.

<u>Inspection or Test</u>	<u>Requirement paragraph</u>	<u>Method paragraph</u>
Certification	3.3.1 and 3.3.2	4.3.6
Power consumption	3.4.10	4.3.8.1
Insulation resistance	3.4.11	4.3.8.2
Electromagnetic compatibility	3.4.12	4.3.8.3
Dielectric strength	3.4.13	4.3.8.4
Starting and stopping	3.5.1	4.3.8.5
Operating position	3.5.2	4.3.8.6
Vibration	3.5.3.1.1. and 3.5.3.1.2	4.3.8.7
Shock	3.5.4.1 and 3.5.4.2	4.3.8.8
Temperature cycling	3.5.5	4.3.8.9
Moisture resistance	3.5.6	4.3.8.10
Salt spray	3.5.7	4.3.8.11
Power supply tolerance	3.5.8	4.3.8.12
Water resistance	3.5.9	4.3.8.13
Long term accuracy	3.5.10	4.3.8.14

4.3 Conformance inspection. Conformance inspections shall be in accordance with the inspections and tests listed in tables II and III.

4.3.1 Inspection lot. Unless otherwise specified by the contracting officer, inspection lot size, formation and presentation of lots shall be in accordance with "Submission of Product" and "Drawing of Samples" specified in ANSI/ASQC Z1.4.

4.3.2 Classification of examinations and tests. Examinations and tests shall be performed on a defect (individual characteristic) basis in accordance with ANSI/ASQC Z1.4 and the inspection level and sampling plans specified in tables II and III. Examination and tests for packaging, packing and marking shall be in accordance with section 5 and the contract or purchase order.

4.3.3 Test equipment. Accuracy of meter shall be determined by a mechanical, electric or electronic time measuring instrument having a daily rate of ± 10 seconds per day.

4.3.4 Visual examination. The meter shall be examined visually for conformance to workmanship and requirements as specified in tables II and III.

4.3.5 Mechanical examination. The meter shall be checked for conformance to dimensional requirements.

4.3.6 Certification. Certification, when required herein, shall certify that the meter has been determined to be in full compliance with the specified requirements and that workmanship and materials conform with recognized standards of commercial quality. The certification shall reference the contract or purchase order number and shall be signed by a responsible officer of the contractor. The certificate shall contain the following statement: "as the authorized representative of the contractor, the undersigned warrants and represents that all the information supplied herewith is true and accurate."

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TABLE II. Classification of defects. Level II of Table I with Sampling Plan Table II-A of ANSI/ASQC Z1.4CRITICAL: NONE

<u>MAJOR</u>	<u>REQUIREMENT</u>	<u>TEST PROCEDURE</u>
101. Fungus proof	3.3.1	4.3.6
102. Protective treatment	3.3.2	4.3.6
103. Dissimilar Metals	3.3.3	4.3.6
104. Case	3.4.1	4.3.5
105. Finish	3.4.2	4.3.4
106. Window	3.4.3	4.3.4
107. Grounding	3.4.4	4.3.4
108. Elapsed time indicator	3.4.5	4.3.4
109. Running indicator	3.4.6	4.3.4
110. Terminals	3.4.7	4.3.4
111. Terminal polarity	3.4.7.1	4.3.4
112. Mounting Hardware	3.4.8	4.3.4
113. Starting and stopping	3.5.1	4.3.8.5
 <u>MINOR</u>		
201. Weight	3.4.14	4.3.8.15
202. Identification marking	3.6	4.3.8.16
203. Workmanship	3.7	4.3.8.17

TABLE III. Classification of defects. Level S-4 of Table I with Sampling Plan Table II-A of ANSI/ASQC Z1.4CRITICAL: NONE

<u>MAJOR</u>	<u>REQUIREMENT</u>	<u>TEST PROCEDURE</u>
101. Operating position	3.5.2	4.3.8.6
102. Normal Vibration	3.5.3.1.1	4.3.8.7.1
103. Standard Shock	3.5.4.1	4.3.8.8.1
104. Power supply tolerance	3.5.8	4.3.8.12
105. Water resistance	3.5.9	4.3.8.13

MINOR: NONE

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4.3.7 Test conditions.

4.3.7.1 Atmospheric. Unless otherwise specified, the tests shall be performed at $+23^{\circ}\text{C} \pm 10^{\circ}\text{C}$, at barometric pressure of 28 to 31 inches of mercury and a maximum relative humidity of 80 percent.

4.3.7.2 Voltage and frequency. Unless otherwise specified, type I meters shall be tested, as applicable, at 28 volts or 120 volts and type II meters shall be tested at rated voltage and frequency as specified.

4.3.7.3 Temperature changes. Temperature changes, when required, shall be gradual to reduce the possibility of thermal shock.

4.3.7.4 Accuracy. Unless otherwise specified meters shall be accurate within ± 1 percent of total elapsed time during and following tests.

4.3.8 Test methods.

4.3.8.1 Power consumption. The power consumption shall be determined by a calibrated wattmeter.

4.3.8.2 Insulation resistance. The insulation resistance between terminals and case shall exceed 100 megohms when subjected to method 302, test condition A of MIL-STD-202.

4.3.8.3 Electromagnetic compatibility. Grade A meters shall be subjected to methods CE102 and RE102 of MIL-STD-461.

4.3.8.4 Dielectric strength. Meters shall be subjected to method 301 of MIL-STD-202 for 60 seconds between the terminals and case with test voltage as follows:

- a. dc meter: 200 volts rms, 60 Hz
- b. 60 Hz ac meter: 1000 volts rms, 60 Hz
- c. 400 Hz ac meter: 500 volts rms, 60 Hz

4.3.8.5 Starting and stopping. The meter shall be energized with applicable rated voltage and frequency (see 4.3.7.2). After 60 seconds, the meter shall be de-energized. This shall be repeated 5 times with intervals of 180 seconds. Failure to start within 10 seconds or stop within 120 seconds shall be cause for rejection.

4.3.8.6 Operating position. The meter shall be energized with applicable rated voltage and frequency (see 4.3.7.2) and operated for a minimum of four hours in each of the following positions:

- a. Face up
- b. Face down
- c. Face up 45 degrees from horizontal

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4.3.8.7 Vibration.

4.3.8.7.1 Normal vibration. While energized the meter shall be subjected to 4 cycles of vibration, each of 15 minutes, in 3 mutually perpendicular axes with the frequency varied logarithmically from 7 to 500 Hz and return to 7 Hz. The amplitude from 7 to 57 Hz shall be 0.06 inch double amplitude (maximum total excursion) and from 57 to 500 Hz the acceleration shall be 10g's. The meter shall operate for one hour following vibration.

4.3.8.7.2 Extended vibration. Following normal vibration the meter, while energized, shall be vibrated with an input acceleration level of 2g's as follows:

<u>Frequency (Hz)</u>	<u>Axis</u>	<u>Time</u>	<u>Temperature</u>
60	Vertical	10 hours	- 32°C ± 2°C
60	Vertical	30 hours	+23°C ± 10°C
60	Vertical	10 hours	+68°C ± 2°C

The meter shall operate for 24 hours following extended vibration.

4.3.8.8 Shock.

4.3.8.8.1 Standard shock. The meter shall be dropped from a height of two feet onto the end grain of a hardwood block of beech, oak or hard maple which shall be a minimum of eight inches square. Following the test the meter shall be visually examined for loose or damage parts and operate one hour.

Note: Damage to the flange shall not be cause for rejection.

4.3.8.8.2 High impact shock. The meter shall be subjected to method 516 of MIL-STD-810 using procedure II with a terminal-peak saw tooth shock pulse configuration with a peak value of 75g's having a nominal duration of 6 milliseconds.

4.3.8.9 Temperature cycling. While energized at rated voltage and frequency (see 4.3.7.2) the meter shall operate six hours at each of the following temperatures:

- a. +68°C ± 2°C
- b. -4°C ± 2°C
- c. -40°C ± 2°C

4.3.8.10 Moisture resistance. The meters shall be subjected to method 106 of MIL-STD-202 without being energized. Following the test the meter shall be examined for loose or damaged parts and shall operate for one hour.

4.3.8.11 Salt spray. Meters shall be subjected to method 101, condition B of MIL-STD-202. Following the test the meter shall be examined for evidence of corrosion, deterioration of finish and shall operate for one hour.

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4.3.8.12 Power supply tolerance. The meters shall operate at each voltage and frequency specified. The meters shall operate for four hours at rated frequency and voltage (see 4.3.7.2) between the tests for minimum and maximum voltage.

- a. 400 Hz: one-half hour at 115 volts, 300 Hz and one-half hour at 128V, 500 Hz.
- b. 60 Hz: one-half hour at 115 volts, 50 Hz and one-half hour at 128 volts, 70 Hz.
- c. dc: For each range one-half hour at minimum voltage and one-half hour at maximum voltage.

Following the test the meter shall operate for one hour. The meters are exempt from being accurate during the test.

4.3.8.13 Water resistance. The meters shall be suspended in distilled water contained in a partially filled transparent chamber which shall be evacuated to a negative gage pressure of 5.5 inches of mercury (24.5 inches absolute pressure) for a period of 15 seconds. Meters showing evidence of air leakage during the test period shall be rejected.

Note: Bubbles which are the result of entrapped air on the various exterior parts of the meters shall not be considered a leak. The meters being tested and the water used shall be at ambient temperature.

4.3.8.14 Long term accuracy. The meter shall operate continuously for 2500 hours within an accuracy of ± 1 percent.

4.3.8.15 Weight. The meter shall be weighed to insure that the weight does not exceed that specified in 3.1.

4.3.8.16. Identification marking. All numbers, names and location of identification marking shall be inspected for corrections, legibility and application in accordance with 3.6.

4.3.8.17 Workmanship. Quality of workmanship in conjunction with industry standard practices shall be inspected at the discretion of the Government during in-process and on completed meters to insure that meters are continually produced in accordance with 3.7.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

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6. NOTES

6.1 Intended use. The time totalizing meters covered by this specification are intended to accurately record equipment, machine or system operating hours or idle time. Type I meters (see MIL-DTL-3971/1) are for dc applications and type II meters (see MIL-DTL-3971/2) are for ac applications.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Title, number and date of applicable specification sheet.
- c. Applicable stock number.
- d. Applicable part number.
- e. Terminal overload current and voltage.
- f. Flange, 2 hole or 3 hole.
- g. Selection of applicable levels of preservation, packaging and packing (see 5.1). The ordering activity may specify Group 3 packaging requirements of PPP-T-360, Time Measuring Instruments, Packaging of, should same be required.
- h. Responsibility for inspection. Specify in the contract or purchase order which entity (supplier or Government) is responsible for the performance of inspection requirements, where those inspections must (or may) be performed, and any inspection rights the Government chooses to reserve in order to assure the products conform to prescribed requirements.

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which, at the time of contract award, are qualified for inclusion in Qualified Products List (QPL) 3971 whether or not such products have actually been so listed by that date. The attention of suppliers is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders covered by this specification. Information pertaining to qualification of products may be obtained from the Defense Supply Center Richmond, Standardization Branch, ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

6.4 Definitions.

6.4.1 Voltage. All alternating current voltages as used in this specification will be considered to be root mean square (rms) values.

6.4.2 Electromagnetic compatibility. Electromagnetic compatibility is the capability of a meter to operate without radiating electromagnetic energy which may impair the operation of electrical or electronic equipment.

6.5 Subject term (key word) listing:

Hour meter
Time indicator, elapsed

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6.6 Identification of changes. Changes are not annotated because most of the changes were to delete references to canceled documents (and associated paragraph renumbering) or to otherwise bring the specification into compliance with acquisition reform guidance.

Custodians:

Army – AR

Navy – SH

Air Force – 99

Preparing activity:

DLA-GS

(Project 6645-0502)

Reviewers:

Army – AT, CR

Navy – AS, SA, MC, EC

Air Force – 11

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1,2,3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4,5,6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of this form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE
1.DOCUMENT NUMBER

MIL-DTL-3971E

2.DOCUMENT DATE (YYMMDD)

010124

**3.DOCUMENT TITLE METERS, TIME TOTALIZING, NON-HERMETICALLY SEALED, ELECTRICAL:
GENERAL SPECIFICATION FOR**
4.NATURE OF CHANGE*(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*
5.REASON FOR RECOMMENDATION
6.SUBMITTER
a.NAME *(Last, First, Middle Initial)*
b.ORGANIZATION
c.ADDRESS *(Include Zip Code)*
d.TELEPHONE *(Include Area Code)*

(1)Commercial

(2)DSN(If applicable)

**7.DATE
SUBMITTED
(YYMMDD)**
8.PREPARING ACTIVITY
a.NAME

L. Craig Hammond

b.TELEPHONE *(Include Area Code)*

(1) Commercial (2) DSN
(804) 279-5019 695-5019

c.ADDRESS *(Include Zip Code)*

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IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:

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