

MIL-M-3971D  
 12 June 1981  
 SUPERSEDING  
 MIL-M-3971C  
 22 October 1969

## MILITARY 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 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 covered by this specification shall be of the following types and grades:

Type I - Direct Current, Total Capacity: 10,000 hours  
 Type II - Alternating Current, Total Capacity, As Follows:

Class 1. 120V, 60Hz - 100,000 hours  
 Class 2. 120V, 60Hz - 10,000 hours

Grade A - With Electromagnetic Compatibility  
 Grade B - Without Electromagnetic Compatibility

#### 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

##### SPECIFICATIONS

###### Federal

PPP-T-360

Time Measuring Instruments, Packaging of

###### Military

\* MIL-M-3971/1

Meters, Time Totalizing, Non-Hermetically Sealed, Electrical; Type I, 4-40V or 40-130V or 10-130V; Grades A and B, 2½ Inch and 3½ Inch, 3 Hole Flange

Beneficial comments (recommendations, additions, deletions), and any pertinent data which may be of use in improving this document, should be addressed to: Commander, US Army Armament Research and Development Command, ATTN DRDAR-TST-S, Dover, New Jersey 07801, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426), appearing at the end of this document, or by letter.

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\* MIL-M-3971/2 Meters, Time Totalizing, Non-Hermetically Sealed, Electrical; Type II, 120V, 60Hz and 120V, 400Hz Grades A and B, 2½ Inch and 3½ Inch, 3 Hole Flange

## STANDARDS

## Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-109	Quality Assurance Terms and Definitions
MIL-STD-202	Test Methods for Electronic and Electric Component Parts
MIL-STD-461	Electromagnetic Interference Characteristics, Requirements for Equipment
MIL-STD-462	Electromagnetic Interference Characteristics, Measurement Of
* MIL-STD-810	Environmental Test Methods
MIL-STD-889	Dissimilar Metals

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

## 3. REQUIREMENTS

3.1 Detail specification. - The individual item requirements shall be as specified herein and in accordance with the applicable detailed specification. In the event of any conflict between requirements of this specification and the detailed specification, the latter shall govern (see 6.2).

\* 3.1.1 Reference to detail specification. - For the purposes 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 which are qualified for listing on the applicable qualified products list at the time set for opening of bids (see 4.3 and 6.4).

\* 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 4.3.3).

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 suitable 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 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 suitably protected against electrolytic corrosion.

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 3.1.

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 and 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. The manner of indication and location is optional.

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.

\* 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.

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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  $\frac{1}{2}$  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.

3.4.10 Power consumption. - The power consumption for meters shall be as specified in 3.1.

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

3.4.12 Electromagnetic compatibility. - Grade A meters shall conform to the electromagnetic compatibility requirements for class IIC as specified in MIL-STD-461.

3.4.13 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 3.1.

3.4.14 Weight. - The weight of the meter shall not exceed that specified in 3.1.

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 3.1.

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

3.5.3 Vibration.

3.5.3.1 Accuracy. - Meters shall remain accurate within  $\pm 1\%$  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 hertz (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°C + 2°C
60	Vertical	30 hours	+23°C + 10°C
60	Vertical	10 hours	+68°C + 2°C

### 3.5.4 Shock.

3.5.4.1 Standard shock. - Meters shall be accurate within + 1% of actual elapsed time and show no evidence of damage (excluding flange) after an uncontrolled drop from a height of two (2) feet on to a block of hard wood.

3.5.4.2 High impact shock. - Meters shall be accurate within + 1% of actual elapsed time and show no evidence of damage after being subjected to two (2) shocks in each direction along the three (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 six (6) milliseconds.

3.5.5 Temperature cycling. - Meters shall be accurate within + 1% 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°C + 2°C
- b. -4°C + 2°C
- c. -53°C + 2°C

\* 3.5.6 Moisture resistance. - Meters shall be accurate within 1% of actual elapsed time and show no evidence of corrosion or damage after being subjected to ten (10) cycles, each of 24 hours duration, of humidity varying from 80 to 98% relative humidity and temperature ranging from +65°C to -10°C. At the completion of any five of the first nine cycles the meters shall be vibrated 15 minutes, at room 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% of actual elapsed time and show no evidence of damage to the finish after being subjected to 48 hours of an atomized 5% 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.

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\* 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  $\frac{1}{2}$  hour in any 4 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 six and one quarter ( $6\frac{1}{4}$ ) feet for fifteen (15) seconds at  $+22^{\circ}\text{C}$  ( $+ 5^{\circ}\text{C}$ ).

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  $\pm 1\%$  at  $23^{\circ}\text{C} \pm 10^{\circ}\text{C}$ .

\* 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.	
		US	

Figure 1

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 (3) letters and the marking for the year shall be the last two (2) numbers, e.g., December 1967 is DEC 67.

3.7 Workmanship. - Workmanship shall be of a quality consistent with the highest existing instrument production standards and practices. All finished surfaces shall be protected against corrosion or damage during manufacture prior to delivery. All fins and other excess material shall be removed from castings and forgings. All surfaces, including threads, shall be free from burrs and sharp edges. All material shall be sound, of uniform quality and condition, and free from seams, cracks, and other defects which may adversely affect the strength, endurance, or wear resistance of the part. Any material which has been treated in any manner to conceal defects therein, shall not be offered for Government acceptance. Welding or other means for the repair of defects in materials shall not be performed unless specifically authorized by the Contracting Officer.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Quality assurance terms and definitions. - Quality-assurance terms and definitions shall be as listed in MIL-STD-109.

4.2 Classification of examinations and tests. - The examination and testing of meters shall be as follows:

- a. Qualification tests.
- b. Quality conformance tests.

4.3 Qualification tests. - Qualification testing of meters shall be in conformance with the qualification tests listed in Table I for the types and grades as specified.

4.3.1 Samples. - Four (4) meters shall be subjected to qualification tests. The samples shall be representative of the meters produced under order or contract.

TABLE I - QUALIFICATION TESTS

<u>Examination or Test</u>	<u>Requirement Paragraph</u>	<u>Method Paragraph</u>
Certification	3.3.1 thru 3.3.3, 3.4.9	4.4.6
Mechanical	3.4.1, 3.4.14	4.4.5
Visual	3.4.2 thru 3.4.8, 3.6	4.4.4
Power consumption	3.4.10	4.4.8.1
Insulation resistance	3.4.11	4.4.8.2
Electromagnetic compatibility	3.4.12	4.4.8.3
Dielectric strength	3.4.13	4.4.8.4
Starting and stopping	3.5.1	4.4.8.5
Operating position	3.5.2	4.4.8.6
Vibration	3.5.3.1.1 and 3.5.3.1.2	4.4.8.7
Shock	3.5.4.1 and 3.5.4.2	4.4.8.8
Temperature cycling	3.5.5	4.4.8.9
Moisture resistance	3.5.6	4.4.8.10
Salt spray	3.5.7	4.4.8.11
Power supply tolerance	3.5.8	4.4.8.12
Water resistance	3.5.9	4.4.8.13
Long term accuracy	3.5.10	4.4.8.14

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4.3.2 Failure. - Failure of any sample meter to pass all of the examinations or tests listed in Table I is cause for rejection of all samples submitted for qualification at one time.

4.3.3 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.

4.4 Quality conformance tests. - Quality conformance tests shall be in accordance with the examinations and tests listed in Tables II and III.

4.4.1 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 MIL-STD-105.

4.4.2 Classification of examination and tests. - Examinations and tests shall be performed on a defect (individual characteristic) basis in accordance with MIL-STD-105 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 PPP-T-360.

TABLE II - CLASSIFICATION OF DEFECTS

Level II of Table I with Sampling Plan Table II-A  
of MIL-STD-105

CRITICAL: NONE

MAJOR: AQL 1.5

	<u>REQUIREMENT</u>	<u>TEST PROCEDURE</u>
101. Fungus proof	3.3.1	4.4.6
102. Protective treatment	3.3.2	4.4.6
103. Metals	3.3.3	4.4.6
104. Case	3.4.1	4.4.5
105. Finish	3.4.2	4.4.4
106. Window	3.4.3	4.4.4
107. Grounding	3.4.4	4.4.4
108. Elapsed time indicator	3.4.5	4.4.4
109. Running indicator	3.4.6	4.4.4
110. Terminals	3.4.7	4.4.4
111. Terminal polarity	3.4.7.1	4.4.4
112. Hardware	3.4.8	4.4.4
113. Starting and stopping	3.5.1	4.4.8.5

MINOR: AQL 2.5

201. Weight	3.4.14	4.4.8.17
202. Identification marking	3.6	4.4.8.16
203. Workmanship	3.7	4.4.8.15

TABLE III - CLASSIFICATION OF DEFECTS

Level S-4 of Table I with Sampling Plan Table II-A  
of MIL-STD-105

CRITICAL: NONE

<u>MAJOR:</u> AQL 4.0	<u>REQUIREMENT</u>	<u>TEST PROCEDURE</u>
101. Operating position	3.5.2	4.4.8.6
102. Vibration	3.5.3.1.1	4.4.8.7.1
103. Shock	3.5.4.1	4.4.8.8.1
104. Power Supply tolerance	3.5.8	4.4.8.12
105. Water resistance	3.5.9	4.4.8.13

MINOR: NONE

4.4.3 Test equipment. - Accuracy of meter shall be determined by a mechanical, electric or electronic time measuring instrument having a daily rate of  $\pm 10$  seconds per day.

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

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

4.4.6 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."

4.4.7 Test conditions.

4.4.7.1 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.

4.4.7.2 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.

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

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4.4.7.4 Accuracy. - Unless otherwise specified meters shall be accurate within + 1% of total elapsed time during and following tests.

4.4.8 Test methods.

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

4.4.8.2 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.

4.4.8.3 Electromagnetic compatibility. - Grade A meters shall be subjected to Methods CE03 and RE02 of MIL-STD-462.

4.4.8.4 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

4.4.8.5 Starting and stopping. The meter shall be energized with applicable rated voltage and frequency (see 4.4.7.2). At the expiration of 60 seconds the meter shall be de-energized. This shall be repeated five times with intervals of 180 seconds. Failure to start within 10 seconds or stop within 120 seconds shall be cause for rejection.

4.4.8.6 Operating position. - The meter shall be energized with applicable rated voltage and frequency (see 4.4.7.2) 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

4.4.8.7 Vibration.

4.4.8.7.1 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.

- \* 4.4.8.7.2 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	$-32^{\circ}\text{C} \pm 2^{\circ}\text{C}$
60	Vertical	30 hours	$+23^{\circ}\text{C} \pm 10^{\circ}\text{C}$
60	Vertical	10 hours	$+68^{\circ}\text{C} \pm 2^{\circ}\text{C}$

The meter shall operate for 24 hours following extended vibration.

#### 4.4.8.8 Shock.

4.4.8.8.1 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 the size of which shall be a minimum of eight inches square. Following the test the meter shall be visually examined for loose or damaged parts and operate one hour.

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

4.4.8.8.2 High impact shock. - The meter shall be subjected to Method 516 of MIL-STD-810 utilizing Procedure II with a terminal-peak saw tooth shock pulse configuration with a peak value of 75g's having a nominal duration of six (6) milliseconds.

4.4.8.9 Temperature cycling. - While energized at rated voltage and frequency (see 4.4.7.2) the meter shall operate 6 hours at each of the following temperatures:

$+68^{\circ}\text{C} \pm 2^{\circ}\text{C}$   
 $-4^{\circ}\text{C} \pm 2^{\circ}\text{C}$   
 $-53^{\circ}\text{C} \pm 2^{\circ}\text{C}$

4.4.8.10 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 operate one hour.

4.4.8.11 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 operate one hour.

- \* 4.4.8.12 Power supply tolerance. - The meters shall operate at each voltage and frequency specified. The meters shall operate for four (4) hours at rated frequency and voltage (see 4.4.7.2) between the tests for minimum and maximum voltage.

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- a. 400 Hz: 1/2 hour at 115 volts, 300 Hz and  
1/2 hour at 128V, 500 Hz.
- b. 60 Hz: 1/2 hour at 115 volts, 50 Hz and  
1/2 hour at 128 volts, 70 Hz.
- c. DC: For each range 1/2 hour at minimum voltage  
and 1/2 hour at maximum voltage.

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

4.4.8.13 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 five and one-half ( $5\frac{1}{2}$ ) inches of mercury (twenty-four and one-half ( $24\frac{1}{2}$ ) inches absolute pressure) for a period of fifteen (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 room temperature.

4.4.8.14 Long term accuracy. - The meter shall operate continuously for 2500 hours within an accuracy of  $\pm 1\%$ .

4.4.8.15 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.

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

4.4.8.17 Weight. - The meter shall be inspected to insure that the weight does not exceed that specified in 3.1.

## 5. PACKAGING

5.1 Packaging and packing. - Packaging and packing shall be as specified for Packaging Group 3 in PPP-T-360.

5.2 Marking. - In addition to the marking requirements specified in PPP-T-360, the unit package, intermediate package and shipping container shall be marked with the date the meters were packaged, after acceptance by the Government.

## 6. NOTES

6.1 Intended use. - The time totalizing meters covered by this specification are intended for accurately recording equipment operating hours.

6.2 Ordering data. - Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Selection of applicable levels of preservation, packaging and packing.
- (c) Applicable stock number.
- (d) Applicable part number.
- (e) Title, number and date of applicable specification sheet.

6.3 Definitions.

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

6.3.2 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.

\* 6.4 Qualification. - With respect to products requiring qualification, awards will be made only for products which are at the time set for opening of bids, qualified for inclusion in the applicable Qualified Products List whether or not such products have actually been so listed by that date. The attention of suppliers is called to this requirement, and manufacturers are urged to arrange to have the products they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. The activity responsible for the Qualified Products List is the US Army Armament Research and Development Command, ATTN: DRDAR-TST-S, Dover, NJ 07801 and information pertaining to qualification of products may be obtained from that activity.

6.5 Changes from previous issue. - The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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**Custodians:**

Army - AR  
Navy - SH  
Air Force - 99

**Preparing activity:**

Army - AR

**Review activities:**

Army - ER  
Navy - AS  
Air Force - 11

Project No. 6645-0348

**User Activities:**

Army - ME  
Navy - MC, YD, SA



FOLD

DEPARTMENT OF THE ARMY



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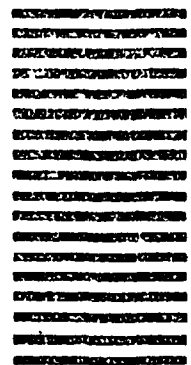
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