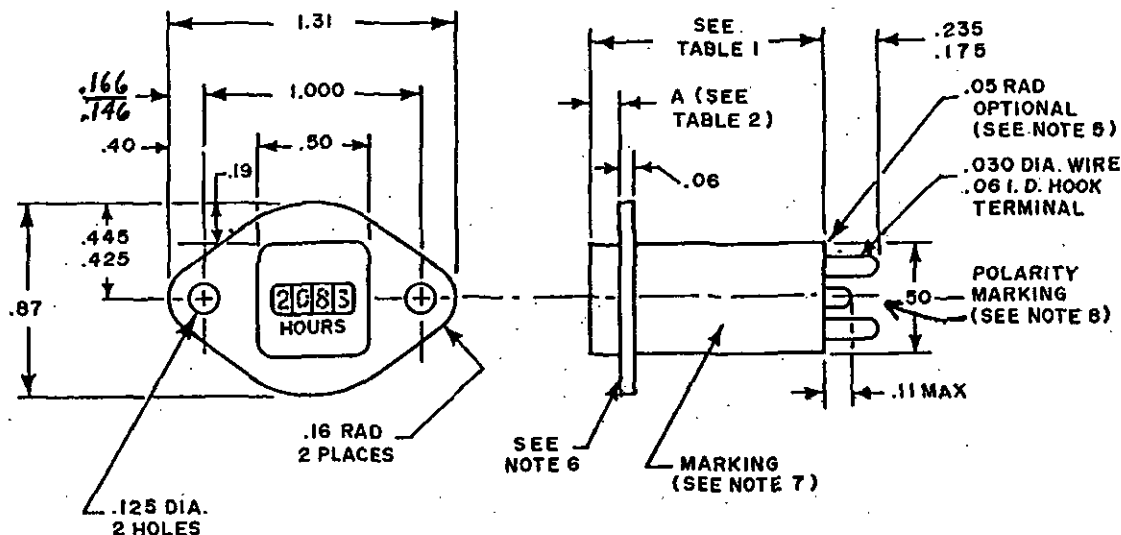


FED. SUP CLASS
6645

USER ACTIVITIES:

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NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is $\pm .02$ for two place decimals and $\pm .005$ for three place decimals.
3. For design feature purposes, this standard takes precedence over procurement documents referenced herein.
4. Referenced documents shall be of the issue in effect on date of invitation for bid.
5. Optional radius applies to all corners and edges.
6. Exposed tin plate on this surface of mounting flange only, per MIL-T-10727, to provide an electrical ground for the case.
7. Marking surface is optional. Marking must not be obscured by mounting bracket.
8. Polarity marking (+) near positive terminal on this surface.

To accommodate the broad range of contractor equipment requirements, this standard offers two meter configurations for procurement. Each meter shall meet its specific requirements as defined in TABLE 1, and shall otherwise comply with this standard.

The meters shall be identified as follows:

MS 21341 A - 05
A or B, per TABLE 1 Dash Number per TABLE 2

Requirements: In accordance with MIL-M-7793, except as specified herein.

Dimensions: See Figure and TABLE 1.

Electrical: Unless otherwise specified, all tests shall be at room pressure and approximately 23°C.

Range: Zero to 9999 hours.

Scale Designator: HOURS

Mounting Flange: Per Note 6, tin-plate .0002 to .0004 inch thick to provide means for electrical ground of the case (See Figure).

Transient Protection: No temporary or permanent degradation or other malfunction shall be produced in the time totalizing meter if the input voltage should increase to the maximum value shown in MIL-STD-704A, Fig. 17 and Fig. 9 - curve 1 (600 Volts and 80 Volts, respectively).

Ripple Protection: Meter must maintain the accuracy specified in TABLE 1 when subjected to the ripple requirement of Para. 5.2.2, 5.2.2.1 and Figure 7 of MIL-STD-704A, August 9, 1966.

Operational Check: Meter shall register accurate time over the input voltage range specified in TABLE 1 between -65°C and +125°C.

Case Finish: Lusterless black, No. 307038 per FED-STD-595.

⑥ ENTIRE STANDARD REVISED

P. A. AF - 82 Other Cost AF - 99	INTERNATIONAL INTEREST	TITLE METER, TIME TOTALIZING HERMETICALLY SEALED 28 Vdc	MILITARY STANDARD MS21341 (USAF)
PROCUREMENT SPECIFICATION MIL-M-7793	SUPERSEDES:	SHEET 1 OF 3	

DD FORM 672-1 (LIMITED COORDINATION)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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Marking: Meter shall remain clearly and legibly marked with the following information after subjection to the environmental requirements:

(A) Part Number: (Example: MS 21341A-05)
 (B) Source and date code per MIL-STD-285
 (C) 28 VDC Nominal Voltage

TABLE 1 Meter Configurations and Requirements

Requirements	MS 21341A	MS 21341B
Case Length, Inch (See Figure)	1.094/1.047	2.062/2.000
Maximum Weight, Ounce	0.6	1.5
Input Voltage Range, VDC	10 to 34	23 to 32
Nominal Input Power, Watt	0.085 (Average)	1.000
Maximum Input Power, Watt	0.150 (Average)	1.500
Accuracy, Percent	0.1	1.0

TABLE 2 Mount Setback Dash Numbers and Dimensions (See Figure)

DASH Number	DIM. A ± .015	DASH Number	DIM. A ± .015	DASH Number	DIM. A ± .015
-01	.000	-10	.281	-19	.562
-02	.031	-11	.312	-20	.594
-03	.062	-12	.344	-21	.625
-04	.094	-13	.375	-22	.656
-05	.125	-14	.406	-23	.688
-06	.156	-15	.438	-24	.719
-07	.188	-16	.469	-25	.750
-08	.218	-17	.500	-26	.781
-09	.250	-18	.531		

Quality conformance inspection: The following tests, run in the order shown on all meters, supersede the individual tests and sampling Plan A and B specified in MIL-H-7793. The maximum meter reading at the time of delivery shall be 0001.

- (A) Examination of Product.
- (B) Operational check. Ten operations for instant starting at 23°C, five each at the minimum and maximum input voltages specified in TABLE 1.
- (C) Thermal shock per MIL-STD-202, method 107, test condition B, modified as follows:

Test Conditions

- During Step 1, the meter shall be operated at its maximum input voltage as specified in TABLE 1 of this standard.
- During Step 3, the meter shall be operated at its minimum operating voltage as specified in TABLE 1 of this standard.

Measurements during Cycling

The meter shall show no evidence of damage and shall not malfunction.

- (D) Operation at 23°C and 28 VDC for 20 hours.
- (E) Hermetic seal.
- (F) Insulation resistance.
- (G) Sea level dielectric stress (600V RMS, 2 to 5 seconds).
- (H) All meters failing one or more of these quality conformance inspection tests shall be rejected.

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DD FORM 672-1 (LIMITED COORDINATION)

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USER ACTIVITIES

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In addition to the above tests, three sample meters total (any part number) shall be subjected to the following tests every twelve months. These tests shall be conducted at a government approved laboratory.

Salt Spray
Vibrations
Shock

Life: Meters shall be operated at input voltage limits specified in TABLE 1, for 100 hours in each of the following sequences:

- (1) Maximum voltage at 125°C
- (2) Minimum voltage at 125°C
- (3) Maximum voltage at -65°C
- (4) Minimum voltage at -65°C
- (5) 28 VDC at room ambient

Voltage rise time as follows:

- (1) Apply a voltage rising from zero to maximum input voltage in:
 - (a) 3 milliseconds maximum
 - (b) 2 ±.5 seconds
- (2) Repeat both (a) and (b) tests five times.
- (3) The meter shall start in each case.

At conclusion of these tests, meter readings shall be within accuracy specified in TABLE 1. The test report and test samples shall be forwarded to the qualifying activity.

Qualification Test

Qualification tests are to be conducted in accordance with MIL-H-7793, except that four sample meters (designated 1, 2, 3 and 4) shall be submitted to Group 1 tests (see TABLE 3). Samples designated 1 and 2 shall be submitted to Group 2 tests and samples designated 3 and 4 shall be submitted to Group 3 tests.

TABLE 3 Qualification Tests

Group 1		
Examination of Product	3.3.2 3.3.3 3.3.4 3.3.11 3.5 3.9 3.10 3.7.12	Visual examination (4.6.1)
Operational Check		4.6.2
Group 2		
Power Supply tolerance	3.7.12.1	4.6.3
Insulation resistance	3.3.9	4.6.4
Dielectric stress	3.3.8	4.6.5
Altitude	3.7.7	4.6.6
Thermal Shock	3.7.6	4.6.7
Time to come to synchronism	3.7.5	4.6.8
Moisture resistance	3.7.8	4.6.9
Salt Spray	3.7.9	4.6.10
Vibration	3.7.10	4.6.11
Shock	3.7.11	4.6.12
Hermetic seal	3.7.12	4.6.13
Group 3		
Life	3.7.1	4.6.14
Electromagnetic compatibility	3.6	4.6.15

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USER ACTIVITIES

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AF - 99			
PROCUREMENT SPECIFICATION MIL-H-7793	SUPERSEDES:	SHEET 3 OF 3	