

FED. SUPPLY CLASS

5355

1. SCOPE

- 1.1 Scope. This specification covers the general requirements for manually operated, illuminated and nonilluminated, brake and nonbrake, multi-turn counters control dials (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents

- 2.1.1 Specifications, standards and handbooks. Unless otherwise specified, the following specifications, standards and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal/Military

~~A-A-1830~~	~~Tape, Pressure Sensitive Adhesive, Box Closure~~
C-F-206	Felt Sheet, Cloth, Felt, Wool, Pressed
P-C-444	Cleaning Compound, Solvent Soluble, Grease Emulsifying
~~TT-T-266~~	~~Thinner, Dope and Lacquer (Cellulose Nitrate)~~
A-A-857	Thinner, Dope and Lacquer (Cellulose Nitrate)
~~MIL-M-14~~	~~Molding Plastics and Molded Plastic Parts, Thermosetting~~
MIL-STD-2073/1	Standard Practice for Military Packaging
MIL-DTL-3661	Lampholders, Indicator Lights, Indicator Light Housing, and Indicator Light Lenses, General Specification for
MIL-PRF-6081	Lubricating Oil, Jet Engine
MIL-E-17555	Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts); Packaging of
MIL-L-27160	Lighting, Instrument, Integral, White
MIL-PRF-83282	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft NATO Code Number H-537

STANDARDS

Federal

FED-STD-3	Colors, Aeronautical Lighting
FED-STD-H28/2	Screw-Thread Standards for Federal Services, Section 2, Unified Inch Screw-Threads UN and UNR Thread Forms
FED-STD-H28/20	Screw-Thread Standards for Federal Services, Section 20, Inspection Methods for Acceptability of UN, UNR, UNJ, M and MJ Screw-Threads
FED-STD-595	Colors used in Government Procurement

Military

MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
MIL-STD-411	Aircrew Station Signals
MIL-STD-810	Environment Test Methods and Engineering Guidelines

Copies can be obtained from the Department of Defense Single Stock Point (DODSSP). <http://dodssp.daps.dla.mil>.

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THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MIL-D-28728 REVISION B.

THIRD ANGLE PROJECTION	CUSTODIAN	REVISION
	NATIONAL AEROSPACE STANDARDS COMMITTEE	1
PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION SPECIFICATION
NONE	DIAL, CONTROL, MULTI-TURN COUNTERS, GENERAL SPECIFICATION FOR	NSM28728



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REVISION DATE.

FORM 09-01

REVISION DATE: JANUARY 27, 2012

ISSUE DATE: SEPTEMBER 2001

- 2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of solicitation.

ASTM International

ASTM D822	Operating Light and Water Exposure Apparatus (Carbon-Arc Type) for Testing Paint, Varnish, Lacquer and Related Products, Practice for
ASTM D5486/D5486M	Standard Specification for Pressure-Sensitive Tape for Packaging, Box Closure, and Sealing
ASTM D5948	Standard Specification for Molding Compounds, Thermosetting
ASTM G23	~~Operating Light Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials~~
ASTM G152	Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

Copies can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. www.astm.org

Aerospace Industries Association

NASM28728/1	Dial, Control, Multiturn Counters, Vernier, 1.81 Diameter
NASM28728/2	Dial, Control, Multiturn Counters, Vernier, 1.75 Diameter
NASM28728/3	Dial, Control, Multiturn Counters, 10-Turn Counter, Concentric (1.810 - Inch Diameter)
NASM28728/4	Dial, Control, Multiturn Counters, Vernier, 1.16 Diameter
NASM28728/5	Dial, Control, Multiturn Counters, Three-Digits
NASM28728/6	Dial, Control, Multiturn Counters, Three-Digit, Illuminated and Non-Illuminated
NASM28728/7	Dial, Control, Multiturn Counters, 100 - Turn Counters, 4-Digit
NASM28728/8	Dial, Control, Multiturn Counters, Vernier, .88 Diameter
NASM51021	Setscrew-Hexagon Socket, Cup Point, CRES, Passivated, UNC-3A, Plain and Self-Locking

Copies can be obtained from the Aerospace Industries Association, 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209. www.aia-aerospace.org

SAE International

AS25050	Colors, Aeronautical Lights and Lighting Equipment, General Requirements for
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Copies can be obtained from SAE International, 400 Commonwealth Dr., Warrendale, PA 15096-0001. www.sae.org

American Society for Quality

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes
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Copies can be obtained from the American Society for Quality, 600 North Plankinton Ave., Milwaukee, WI 53203. www.asq.org

NCSL International

NCSL Z540.3	Requirements for the Calibration of Measuring and Test Equipment
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Copies can be obtained from NCSL International, 2995 Wilderness Place, Suite 107, Boulder, CO 80301. www.ncsli.org

- 2.3 Order of precedence. In the event of a conflict between the text of this specification and the references other than part standards cited herein, the text of this specification shall take precedence.

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1

NASM28728

SHEET 2



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3. REQUIREMENTS

- 3.1 Part standards. The individual item requirements shall be as specified herein and in accordance with the applicable part standard. In the event of any conflict between requirements of this specification and the part standard, the latter shall govern. If specific requirements specified herein are not required for any dial, it shall be so indicated on the part standard.
- 3.2 First article. When specified, a sample shall be subjected to first article inspection (see 4.5 and 6.4).
- 3.3 Materials. Materials shall be as specified (see 3.1). However, when a definite material is not specified, a material shall be used which will enable the dials to meet the performance requirements of this specification. Acceptance or approval of any constituent material shall not be construed as a guaranty of the acceptance of the finished product.
- 3.3.1 Plastic. Unless otherwise specified (see 3.1), plastic shall be in accordance with ~~MIL-M-14~~ ASTM D5948.
- 3.3.2 Metals. All metal parts shall be of a corrosion-resistant material, or shall be suitably treated to resist corrosion.
- 3.4 Design and construction
- 3.4.1 Form and dimensions. Dials shall be made in form and within the dimensions specified (see 3.1). If the cap has a configuration which might be construed as a pointer or indicator, any orientation mark, such as an arrow or dot, shall be in line with such configuration.
- 3.4.1.1 Concentricity and perpendicularity. Unless otherwise specified (see 3.1), the periphery of the dial shall be concentric to the rotational axis within .025 inches full indicator movement (FIM). The back plane of the dial shall be perpendicular within ± 1 degree to the rotational axis of the dial.
- 3.4.1.2 Threads. All threads shall be right hand and in accordance with FED-STD-H28/2. Acceptability of screw threads shall be in accordance with FED-STD-H28/20, system 22.
- 3.4.2 Insert (when applicable). The insert is applicable when the shaft bore is fabricated from material other than metal. The insert shall be nonrotatable, metallic, full cylinder, completely forming the shaft hole. At the option of the supplier, the insert may be molded in or pressed in the center of the dial body. It shall be provided with two UNC-3B threaded holes for set-screws as specified in 3.4.3. A chamfer of $1/32 \pm 1/64$ inches shall be provided in the insert end which admits the shaft.
- 3.4.3 Setscrews. Unless otherwise specified (see 3.1), locking type, cup point setscrews shall be provided within all dials. The setscrews shall conform to NASM51021 for CRES. Self-locking inserts shall be in accordance with MIL-DTL-18240.
- 3.4.4 Color
- 3.4.4.1 Nonilluminated dials. The color of nonilluminated dials shall be as specified (see 3.1) in accordance with FED-STD-595, and shall remain within the specified limits throughout the tests specified herein. The color for plastic dials shall not be applied by coating or painting, but shall be incorporated in the material.
- 3.4.4.2 Illuminated dials. The lens color shall be as specified in the part standards and shall be evenly distributed over the lens face when lighted or unlighted. The lens color shall be in accordance with the following specifications:
- 3.4.4.2.1 Level I colors

COLORS	2,200° KELVIN
Red	Type I (Aviation) in accordance with AS25050
Yellow	Type I (Aviation) in accordance with AS25050
Green	Type I (Aviation) in accordance with AS25050
Blue	Category I (Aviation) in accordance with FED-STD-3
White	White in accordance with MIL-L-27160

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NASM28728
SHEET 3

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