

INCH-POUND

MIL-DTL-6856D
 16 March 2006
 SUPERSEDING
 MIL-I-6856C
 29 September 1987

DETAIL SPECIFICATION

INDICATOR, PRESSURE, SYNCHRO, 1-1/2 INCH

Inactive for new design after 24 March 1999.

This specification is approved for use by all departments and agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers three hermetically sealed clamp-mounted 1-1/2 inch single synchro pressure indicators.

1.2 Classification. The single synchro pressure indicators should be furnished in three hermetically sealed types, as specified (see 6.2).

Type I - Dial scale 0 to 5
 Type II - Dial scale 0 to 10
 Type III - Dial scale 0 to 25

1.3 Part or identifying number (PIN). The PIN to be used for pressure indicators acquired to this specification is created as follows:

M 6856 - X

Type: 1 - Type I
 2 - Type II
 3 - Type III

Specification number

M prefix

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center Richmond, ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616 or e-mailed to STDZNMGT@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <http://assist.daps.dla.mil>.

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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 of the 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 cited in the solicitation or contract (see 6.2).

FEDERAL STANDARDS

FED-STD-595 - Colors Used in Government Procurement.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-I-7057 - Indicators, Synchro, Aircraft, General Specification for.
MIL-T-7748 - Transmitters, Pressure, Synchro, Aircraft, 320-Degree Movement, High Temperature (177 °C), General Purpose.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-130 - Identification Marking of U.S. Military Property.
MS33639 - Cases, Instrument, Clamp-Mounted, Aircraft.

(Copies of these documents are available at <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other government documents, drawings, and publications. The following other government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

STANDARDIZATION DOCUMENT

SD-6 - Provisions Governing Qualification.

(Copies of these documents are available at <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, 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 General requirements. Each indicator shall conform to the requirements of MIL-I-7057. The requirements herein shall take precedence over any other requirements.

3.2 Qualification. Indicators furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list (QPL) before contract award (see 4.1 and 6.3).

3.3 Design. Each indicator shall be designed so that either one or two indicators can be operated by one pressure transmitter conforming to MIL-T-7748.

3.4 Case. The case of each indicator shall conform to MS33639 for 1-1/2 inch size. The dimensions indicated as "L" in MS33639 shall not exceed 3 inches. The case of each indicator shall be hermetically sealed.

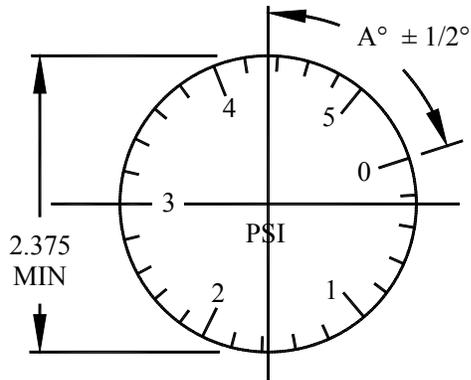
3.5 Electrical receptacle. The electrical receptacle of each indicator shall be mounted on the rear surface of the case of the indicator with the axis of the receptacle within 1/8 inch of the axis of the case.

3.6 Dial. The dial of each indicator shall conform to figure 1. The background of the dial shall be finished with lusterless black paint. All marking on the dial shall be applied with lusterless white paint. The dimensions of the marking on the dial of each indicator shall be as listed in table I. Marking the scale arc on the dial is optional.

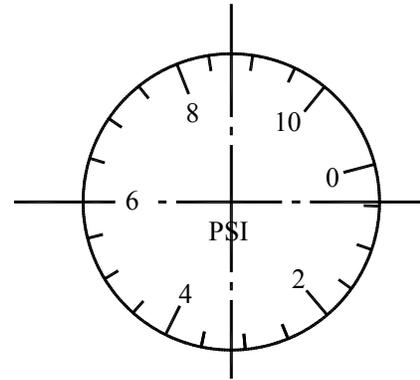
TABLE I. Dial marking.

Marking	Length or height (inch) ± 0.010	Width of graduation or line (inch) ± 0.005
Scale arc	--	0.010
Major graduations	0.125	0.020
Intermediate graduations, if any	0.090	0.015
Minor graduations	0.060	0.010
Numerals	0.100	0.020
PSI	0.040	0.010

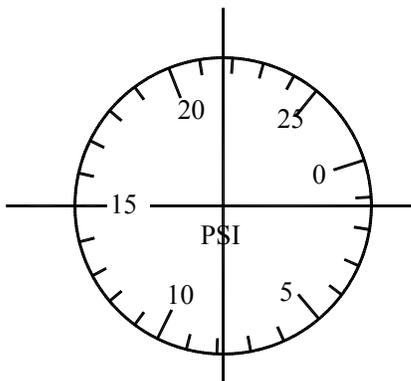
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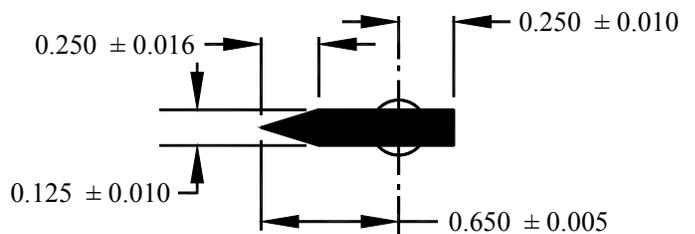
Dial - type I



Dial - type II



Dial - type III



Pointer

Graduation			Angle A from vertical centerline (degrees)
Type I	Type II	Type III	
0	0	0	78
1	2	5	142
2	4	10	206
3	6	15	270
4	8	20	334
5	10	25	38

Note: All figure dimensions are in inches.

FIGURE 1. Dial details.

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3.7 Pointer. The pointer of each indicator shall conform to figure 1. Portions of the pointer that are shown as white on figure 1 shall be furnished with lusterless black paint. Portions of the pointer that are shown as black on figure 1 shall be furnished with lusterless white paint.

3.8 Paint. Lusterless black paint shall conform to FED-STD-595, color number 37038. Lusterless white paint shall conform to FED-STD-595, color number 37875.

3.9 Weight. The weight of each indicator shall not exceed 0.6 pound.

3.10 Identification marking. Each indicator shall be marked for identification in accordance with MIL-STD-130.

3.11 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements and promotes economically advantageous life cycle costs.

4. VERIFICATION

4.1 Qualification and conformance inspections. Qualification and conformance inspection tests shall be conducted in accordance with MIL-I-7057. The test points and tolerances shall be as shown in tables II and III herein.

TABLE II. Scale error tolerance \pm PSI.

Test points (percent full scale)	Scale error (room temperature)	Scale error (low temperature)
	High temperature friction room and high temperature (percent full scale)	Low temperature friction (percent full scale)
0	0.5	1.0
20	0.5	1.0
40	0.5	1.0
60	0.5	1.0
80	0.5	1.0
100	0.5	1.0

TABLE III. Positive error and vibration test point tolerances.

Tests	Test points (percent full scale)	Tolerances (\pm percent full scale)
Position error	50	0.5
Pointer oscillation and variation	50	0.5

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4.2 Test samples. The test samples shall consist of three indicators representative of the production process. The samples shall be identified with the manufacturer's part number and additional information as specified by the qualifying activity. The samples shall undergo all qualification tests specified in MIL-I-7057.

4.3 Maintenance of qualification. At specified intervals determined by the qualifying activity, the manufacturer must be able to demonstrate that the company still has the capabilities and facilities necessary to produce the QPL items in accordance with this specification and the provisions governing qualification specified in SD-6.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by Department of Defense (DoD) or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the inventory control point's packaging activities within the military service or defense agency, or within the military service'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.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The indicators covered by this specification are intended for use with pressure transmitters conforming to MIL-T-7748 or other suitable pressure transmitters for indicating aircraft pressures remotely.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type (see 1.2).
- c. Specific issue of individual documents referenced (see 2.2.1 and 2.2.2).
- d. Packaging (see 5.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products that are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL-6856 whether or not such products have actually been listed by that date. The attention of the contractor 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 for the products covered by this specification. Information pertaining to qualification of products may be obtained from Defense Supply Center Richmond, ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616 or STDZNMGT@dla.mil.

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6.4 Subject term (key word) listing.

dial scale
electrical
transmitter

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - MI

Air Force - 99

Preparing Activity:

DLA - GS1

(Project 6685-0085-000)

Review Activity:

Air Force - 71

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <http://assist.daps.dla.mil>.