

NOT MEASUREMENT SENSITIVE

MIL-T-5796D

15 JUNE 1993
SUPERSEDING
MIL-T-5706C
24 NOVEMBER 1969

MILITARY SPECIFICATION
TRANSMITTER, PRESSURE, OIL, 0-100 PSI

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

1. SCOPE

1.1 Scope. This specification covers one type of remote indicating 320° movement synchro style, differential, oil pressure transmitter, designated type MS28005-2.

2. APPLICABLE DOCUMENTS2.1 Government documents.

2.1.1. 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

Federal

PPP-B-1672

Boxes, Shipping Reusable With Cushioning

Military

MIL-P-116

Preservation, Method Of

MIL-B-121

Barrier Material, Greaseproofed, Waterproofed, Flexible

MIL-T-5350

Transmitter, Synchro Operated, Aircraft, General Specification For

MIL-I-7086

Indicator, Pressure, Oil, 0-100 Psi

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Oklahoma City Air Logistics Center/TICLA, Tinker AFB, OK 73145-5990 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document by letter.
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AMSC N/A

FSC 6620

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

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MIL-B-27497

Bearing, Jewel, Sapphire Or Ruby,
SyntheticSTANDARDSFederal

FED-STD-101

Preservation, Packaging And Packing
Materials: Test ProceduresMilitary

MIL-STD-129

Marking For Shipment And Storage

MIL-STD-2073/1A

DOD Material Procedures For Development
& Application Of Packaging Requirements

MS28005

Transmitter, Pressure, Synchro, Aircraft

MS28010

Indicator, Pressure-Synchro, Single, 2-Inch
Size

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Ave, Building #4, Section D, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards), 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 Qualifications. Transmitters 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 4.5 and 6.3).

3.2 General specification. The requirements of MIL-T-5350 apply as requirements of this specification with the exceptions and additions called out herein. When the two specifications conflict, this specification shall govern.

3.3 Design. The transmitter shall be designed for use with an MS28010-2 oil pressure indicator conforming to MIL-I-7086.

3.4 Design and Construction.

3.4.1 Bosses. Bosses as shown on MS 28005 shall be provided for external oil pressure and vent connections. The lettering P and V shall be permanently inscribed 1/8 inch in height.

3.4.2 Vent connection. The vent boss shall be connected to the opposing pressure element.

3.4.3 Overpressure connection. An overpressure stop shall be provided and shall be so designed as to restrain the prime mover. The stop shall allow the

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indicator pointer to travel beyond full scale to a point approximately midway between the first and last scale graduation.

3.4.5 Dimensions. The outline dimensions of the transmitter shall conform to MS28005.

3.4.6 Water-Vaporproof caps. Electrical connectors shall be equipped with a threaded cap and gasket to protect the electrical contact surfaces from water vapor.

3.4.7 Cadmium. Cadmium is not to be used in the transmitter unless approved by the preparing activity. There should be no cadmium used on the outside case of the transmitter. The fluid whose pressure is being measured by the transmitter shall not come into contact with any cadmium in the transmitter.

3.5 Performance. The transmitter shall be capable of operating in either a horizontal or vertical position.

3.6 Weight. The weight of the transmitter shall not exceed 1.3 pounds.

3.7 Bearings, synthetic. When sapphire or ruby jewel bearings are used they shall be in accordance with MIL-B-27497.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 General specification. Sampling, inspection, and test procedures shall be in accordance with MIL-T-5350 and as specified herein. Errors shall not exceed the applicable tolerances of Tables I or II. The following tests of MIL-T-5350 shall be performed as qualification tests only:

- a. Radio noise suppression
- b. Salt fog

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TABLE I

Scale Error Tolerances.

Tolerance - PSI			
Test Pressure PSI	Room Temperature	Vibration Overpressure	Low Temperature High Temperature Seasoning Endurance
0	1.5	2.0	2.5
10	1.5	2.0	2.5
20	1.5	2.0	2.5
30	1.5	2.0	2.5
40	2.0	2.5	3.0
50	2.0	2.5	3.0
60	2.0	2.5	3.0
70	2.0	3.0	4.0
80	2.0	3.0	4.0
90	2.0	3.0	4.0
100	2.0	3.0	4.0

TABLE II

Pointer Error and Friction Loss Tolerances.

Test	Tolerance - PSI
Friction:	
Room Temperature	2.0
High Temperature	2.0
Low Temperature	3.0
Position Error at 50 psi	1.0
Vibration	
Pointer Oscillation	2.0

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

- a. Qualification inspection (see 4.5).
- b. Quality conformance inspection (see 4.5.2).

4.4 Inspection conditions. Unless otherwise specified, the transmitter shall be tested with the longitudinal axis in a horizontal plane.

4.5 Qualification inspection.

4.5.1 Test samples. The qualification test samples shall consist of three transmitters representative of the production equipment. The samples shall be identified with the manufacturer's part number and such other information as required by the qualifying activity.

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4.5.2 Qualification tests. The qualification tests shall consist of all the tests of this specification including the tests of MIL-T-8350 which are applicable to this specification. Unless otherwise specified by the qualifying activity, tests shall be conducted in the order listed.

4.6 Sampling plan A.

4.6.1 High temperature. The transmitter shall be subjected to a temperature of $70^{\circ} \pm 2^{\circ} \text{C}$ for a period of 6 hours. The transmitter shall be electrically connected to an appropriate indicator with power applied during this test. At the end of this period and with the transmitter still at this temperature the transmitter shall be subjected to a scale error and friction test. Errors shall not exceed the tolerance specified in Tables I and II.

4.7 Sampling plan B.

4.7.1 Overpressure. The transmitter shall be subjected to a pressure of 200 psi for a period of 10 minutes. The transmitter shall be tested not less than 1 hour following the overpressure test for scale error as specified under individual tests on increasing pressure only. The scale error shall not exceed the tolerance of Table I.

4.7.2 Damping. A pressure sufficient to produce full scale pointer deflection shall be applied to the transmitter. A quick release valve shall be used to release the pressure. The time interval for the change from 100 to 10 psi indication shall be 9 ± 3 seconds. The test shall be conducted with lubricating oil with a viscosity of approximately 2,500 centistrokes, such as grade 1005 oil at -65°F , or equivalent.

4.8 Inspection of packaging. Tests of methods of preservation and packaging shall be accomplished in accordance with Section 4 of MIL-P-116 to insure compliance with Section 5 of this specification.

5. PACKAGING

5.1 Preservation. Preservation shall be level 'A' or 'C', as specified. (see 6.2)

5.1.1 Preservation-packaging. Unless otherwise specified by the contracting activity, item shall be packaged in quantity unit pack (QUP) of one each. Each item will be provided a preservation method IC-1 IAW MIL-P-116.

5.1.2 Cleaning. Item shall be cleaned IAW MIL-P-116 process.

5.1.3 Drying. Immediately after cleaning, the item shall be dried following any one or combination of the drying procedures listed in MIL-P-116. The drying procedures employed shall not be injurious to the item.

5.1.4 Level A. Item shall be preserved IAW MIL-P-116 and MIL-STD-2073/1A to provide a method IC-1.

5.1.5 Level C. Item shall be individually preserved in a manner that will afford adequate protection against corrosion, deterioration, and physical damage

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during shipment from the supply source to the first activity as specified in MIL-P-116 and MIL-STD-2073/1A.

5.2 Packing. Packing shall be level "A", "B", or "C", as specified (see 6.2).

5.2.1 Container-cushioning. Intermediate container requirements shall conform to PPP-B-1672, weather-resistant, unless otherwise specified by the contracting activity. Intermediate containers shall be large enough to allow for container and intermediate container. Cushioning material shall be of sufficient density and thickness to insure shock transmission does not exceed values to G's established for the item.

5.2.2 Level A. Item will be preserved as specified in 5.1 and shall be packed in exterior containers conforming to PPP-B-1672, weather-resistant, unless otherwise specified by the contracting activity. Exterior container shall be uniform shape, size and minimum tare and cube, consistent with the protection required. Closure shall be in accordance with appropriate PPP-B-1672 procedures, as specified by contractor, special packaging instructions (SPI), and contracting activity.

5.2.3 Level B. Same as Level "A" unless otherwise specified by special packaging instructions (SPI) or the contracting activity.

5.2.4 Level C. Item will be packed in containers in such a manner as to afford adequate protection against physical damage during direct domestic shipment from the supply source to the first receiving activity. These packs shall conform to MIL-STD-2073/1A.

5.3 Marking. Unit, intermediate, and exterior containers shall be marked IAW special markings required by the contractor, special packaging instructions (SPI) and MIL-STD-129.

5.4 Inspection and Test. Test of methods of preservation shall be accomplished in accordance with section 4 of MIL-P-116 to insure compliance with section 5 of this specifications. Packaging tests shall be conducted IAW rough handling as specified in FED-STD-101.

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 oil pressure transmitter covered by this specification is intended for use to transmit the oil pressure in the lubricating system of aircraft engines to an applicable indicator.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of the specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1).
- c. If sampling plan B tests are to be omitted.
- d. Level of packaging and packing desired.

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6.3 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 the suppliers is called to this requirement, 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. The activity responsible for the Qualified Products List is Oklahoma City Air Logistics Center (OC-ALC)/TICLA, Tinker AFB, Oklahoma 73145-5990 and information pertaining to qualification of products may be obtained from that activity.

6.4 Subject term (key word) listing.

Differential
Synchro
MS28005-2

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 extensiveness of the changes.

Custodian:
AIR FORCE -99
Army -AV

Preparing Activity:
AIR FORCE -71

Project Number:
6620-0495

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 the 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-T-5796D

2. DOCUMENT DATE (YYMMDD)
93/06/15

3. DOCUMENT TITLE
TRANSMITTER, PRESSURE, OIL, 0-100 PSI

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) AUTOVON
(If applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME

QC-ALC/TICLA

b. TELEPHONE (Include Area Code)
(1) Commercial

(2) AUTOVON

c. ADDRESS (Include Zip Code)

Tinker AFB OK 73145-5990

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