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SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

TACHOMETER, VIBRATING REED

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. SCOPE

1.1 Scope. This commercial item description (CID) covers single range fixed and portable resonant tachometers capable of indicating rotational speed for Naval shipboard use.

2. CLASSIFICATION

2.1 Types. Tachometers shall be of the following types, as specified:

FR Resonant, fixed, single range
PR Resonant, portable, single range

2.2 Range. The types FR and PR tachometers shall conform to the applicable ranges and normal reed intervals shown in table I.

TABLE I. Ranges and normal reed intervals.

Range	Nominal operating speed (RPM)	Scale range (RPM)	Normal interval between reeds (RPM)
A	1,000	900 — 1,200	10
B	1,200	900 — 1,500	20
C	1,500	1,200 - 1,800	20
D	1,800	1,425 - 2,175	25
E	2,000	1,625 - 2,375	25
F	2,500	2,175 - 2,875	25
G	3,000	2,250 - 3,750	50
H	3,600	2,850 - 4,350	50
I	4,000	3,250 - 4,750	50
J	5,000	4,250 - 5,750	50
K	6,000	5,250 - 6,750	50
L	7,000	5,500 - 8,500	100
M	8,000	6,500 - 9,500	100
N	10,000	9,000 - 12,000	100
O	12,000	9,000 - 15,000	200
P	15,000	12,000 — 18,000	200
Q	18,000	15,000 — 21,000	200
R	20,000	18,000 — 24,000	200

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any other data which may improve this document should be sent to: Commander, Naval Sea Systems Command, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160.

3. SALIENT CHARACTERISTICS

3.1 Design and construction. The fixed and portable tachometers shall be of the vibrating resonant reed type and shall indicate continuously instantaneous values of RPM instantly adjusting indications to conform to changes of speed. The tachometer enclosure shall be of splash-proof construction. The exterior surface shall be of a durable gray or black finish. Means shall be incorporated in the mechanism to prevent damage to the reed assembly resulting from violent vibration of the instrument. Type PR tachometer shall be a portable type for hand use. Type FR tachometer shall be of the fixed or permanent mounting type for panel or bracket mounting as specified.

3.2 Materials.

3.2.1 Metals. Unless otherwise specified herein, all metals used in the construction of the tachometer shall be corrosion-resistant. Dissimilar metals shall not be used in close physical contact with each other unless suitably finished to prevent electrolytic corrosion.

3.2.2 Flammable materials. Materials used in the construction of the tachometer shall, in the end configuration, be noncombustible or retardant in the most hazardous conditions of atmosphere, pressure, and temperature to be expected in the application. Fire retardant additives may be used provided they do not adversely effect the specified performance requirements of the basic materials. Fire retardant properties shall not be achieved by use of nonpermanent additives in the basic material.

3.2.3 Fungus resistant materials. Materials used in the construction of the tachometer shall be fungus inert materials.

3.3 Physical requirements. The tachometers shall instantaneously and continuously indicate the speed of rotation in RPM of the rotating part to which it is connected. The tachometers shall indicate, without change or adjustment, regardless of the direction of rotation of the driving part. Means shall be incorporated in the mechanism so that compensation for errors to a minimum of 5 percent may be made without remarking the scale.

3.3.1 Windows. The reed assembly shall be protected by a window that is free from flaws and defects and does not cause parallax error.

3.3.2 Carrying case. Portable tachometers shall be furnished in a carrying case, arranged to contain the tachometer and all attendant accessories. The case shall contain a durable instruction card, permanently secured therein, which shall include all necessary instructions and information for proper operation.

3.3.3 Dimensions and weight. Dimensions and weight shall not exceed the following:

	Type FR	Type PR
Length	230 mm	180 mm
Width	155 mm	80 mm
Depth	130 mm	130 mm
Weight (excluding carrying case)	2268 grams	1360 grams

3.3.4 Label plates. The unit shall be provided with a data nameplate and an instruction plate. They shall be attached to the unit, readily visible during normal operating use and shall not adversely affect the life and utility of the unit.

3.3.4.1 Data nameplate. The data nameplate shall contain the manufacturer's name, model, serial number, date manufactured, National Stock Number (if available), and any other information needed to uniquely identify the unit.

3.3.4.2 Instruction plate. The instruction plate shall provide instructions for operation.

3.3.5 Mounting bracket. Type FR tachometers shall be furnished with a mounting bracket for permanently installing the instrument when specified.

3.4 Performance requirements.

3.4.1 Accuracy. Accuracy tests shall be conducted on the types FR and PR tachometers at 5°C, 25°C, and 65°C. The accuracy shall be checked at a minimum of five equally spaced operating speeds over the range of the tachometer. The tachometer shall conform to the following requirements. (Shipboard requirement, see 7.3)

3.4.1.1 Reed frequency. The peak resonant frequency for each reed shall not vary in excess of the following (Shipboard requirement, see 7.2):

a. Plus or minus 0.5 percent from the frequency indicated on the scale at an ambient temperature of 25°C, and for the applicable position of operation specified hereinafter.
b. Plus or minus 1.0 percent from the frequency indicated on the scale for any ambient temperature over the range of 5°C to 65°C, for the applicable position of operation as specified hereinafter:
(1)Type FR - Within 60 degrees of the normal operating position
(2)Type PR - Any position of operation

3.4.1.2 Reed frequency interval. At an ambient temperature of 25°C, the actual interval between adjacent reeds shall not exceed the normal interval between reeds, plus 0.5 percent of the scale indicated value of either reed. As the speed is varied, reeds shall vibrate in proper sequence over an ambient temperature range of 5°C to 65°C. (Shipboard requirement, see 7.2)

3.4.2 Enclosure. The tachometer enclosure shall be splash-proof in accordance with NEMA 250. (Shipboard requirement, see 7.2)

4. REGULATORY REQUIREMENTS

4.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace, or the same product that has been delivered to the Government for shipboard use on a previous procurement. The Government reserves the right to require proof of such conformance.

5.2 Warranty. Special warranty requirements shall be specified in the ordering data. Otherwise, the standard commercial warranty applies.

6. PACKAGING

Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES

7.1 Part or identification number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

Example: AA59734-FR-G

Specification	Type	Range
AA59734	FR (see 2.1)	G (see 2.2)

7.2 Ordering data.

a. Title, number, and date of this CID
b. Type and quantity required
c. Range required
d. Mounting bracket when required
e. Unique packaging and marking requirements
f. Special warranty requirements

7.3 Shipboard requirement. Whenever a "(Shipboard requirement)" is included in a paragraph under SALIENT CHARACTERISTICS, it is meant that the requirement is something that is not normally offered to the commercial market by the manufacturer.

7.4 Sources of documents.

7.4.1 ASTM D3951 – Standard Practice for Commercial Packaging is available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohoken, PA 19428-2959.

7.4.2 NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) is available from The National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

7.5 Potential sources. Based on information available at the time this document was developed, the following companies manufacture products that are believed to comply with the salient characteristics of this Commercial Item Description.

Manufacturers:

Avo Biddle Instruments
510 Township Line Road
Blue Bell PA 19422-2701

Herman H. Sticht Co. Inc.
57 Front Street
Brooklyn, NY 11201

7.6 Key words.

Resonant Reed
Shipboard Use

MILITARY INTERESTS:

Custodians:
  Navy – SH
  Air Force – 99

Review Activities:
  Navy – AS
  Air Force – 03, 33, 71
  DLA – GS, GS1
  CIV - NIH

CIVIL AGENCY COORDINATING ACTIVITY:
  GSA – FSS
Preparing Activity:
  Navy - SH
  (Project 6680-0281)