

PURCHASE DESCRIPTION

Tester, Surge Comparison

SCAT: 4543

Solicitation No: SPRMM1-17-R-YC93

1.0 **GENERAL** This procurement requires a surge comparison tester capable of testing the windings of AC and DC motors and generators.

2.0 **CLASSIFICATION** The equipment shall meet the requirements of MIL-PRF-28800F class 3 for Navy shipboard, submarine and shore applications.

3.0 **OPERATIONAL REQUIREMENTS** The equipment shall test turn-to-turn, coil-to-coil, coil-to-ground, and phase-to-phase insulation. In addition, the equipment shall be provided with a DC high potential capability to at least 10 kV and be capable of testing three-phase devices. The specifications provided below are the minimum requirements and accuracies that will meet the Government's need. The equipment shall at least meet these requirements and accuracies and may provide better performance.

3.1 Surge Test

3.1.1 Output Voltage: Adjustable to 10 kV

3.1.2 Current Rating: 0 to 380 A peak

3.1.3 Display: 8 inch 10 division waveform display for viewing comparison waveforms or automatic comparison analysis performed in the tester.

3.1.4 Auto stop test: The equipment shall have the capability of automatically stopping the surge test on a comparison failure.

3.2 DC high potential test

3.2.1 Output Voltage: 10 kV minimum

3.2.2 Output Current Range: 0 to 5 mA

3.2.3 Overload circuit: The equipment shall be provided with a current overload circuit that has the capability to detect breakdown current of less than 5 mA.

3.3 Resistance Test

3.3.1 Source voltage: 3.9 V maximum

3.3.2 Source current: 600 mA maximum

3.3.3 Measurement range: 0.002 to 800 ohms

3.4 Armature Testing: Shall be accomplished by bar to bar surge testing. The surge tester must be capable of applying at least 400 volts between commutator bars.

4.0 **GENERAL REQUIREMENTS**

4.1 Power Source MIL-PRF-28800F Nominal power source requirements are invoked.
Max Power: 300 W

4.2 Batteries Restrictions: Per MIL-PRF-28800F, Lithium and Mercury batteries are prohibited without prior authorization. A request for approval for the use of Lithium and

Mercury batteries shall be submitted with production lot delivery, after contract award. Approval shall apply only to the specific model proposed.

Exceptions: Per Naval Ordnance Safety and Security Activity (NOSSA), the use of Lithium primary (non-rechargeable) coin cell batteries meeting the following criteria is authorized for Naval personnel and on Naval activities, surface ships, submarines, and aircraft:

- Commercially available coin cell batteries, unmodified, and used in the device recommended by the application manufacturer.
- Coin cell batteries shall only be used in single cell configurations.
- Coin cell batteries shall not be rated for more than 1 Ampere-Hour nameplate capacity.

The coin cell manufacturer and model identification/part number shall be provided at the time of submission of proposals.

4.3 **Dimensions** The total volume shall not exceed 47,050 cm³ (2893 in³). Stowage Dimensions: (height x width x depth) shall be provided at the time of submission of proposals.

4.4 **Weight** The overall weight of the unit shall not exceed 20 kg (44 lb).

4.5 **Calibration interval** The calibration interval shall be 12 months minimum. The equipment shall be within all accuracy requirements specified herein, with a 85% or greater confidence factor following a calibration interval of 12 months.

4.6 **Technical Manual** The maintenance philosophy for this unit shall be level 2 (per MIL-PRF-28800F) and require maintenance to the module level of the unit. The technical manual shall conform to the level 2 maintenance philosophy. This level would be used for most equipment where maintenance and repair is an expected phase of equipment lifecycle. Board level maintenance and troubleshooting information is required. A Use and Installation manual (Operator's Manual) shall be provided separately. Maintenance and Servicing manual shall be provided to two levels of maintenance, unit operational verification level and the module level.

Information required for performance verification shall include:

- Instructions to verify equipment performance,
- List the equipment required for verification tests,
- Step-by-step instructions for test connections,
- Acceptable result criteria,
- Calibration information,
- Self-test routines.

Maintenance information shall include:

- Parts lists to the board level,
- Schematics and component layout drawings,
- Block and schematic diagrams.
- List of required test equipment and connection diagrams, and
- Sequential instructions for disassembly, repair, replacement, and reassembly

shall be provided.

- Board level troubleshooting information,
- Step-by-step instructions for troubleshooting and fault isolation,
- Expected signal levels,
- Test data sheets will be included, and as required,
- The instructions will define localizing a defective circuit card.

Parts lists shall include:

- Parts lists shall be shown on illustrations or a separate listing that includes an index or reference to other illustrations.
- Part number, cage code, and generic description.

The technical manual shall be provided in both printed and electronic formats. The printed format shall be otherwise normally provided. The electronic format shall be in Portable Document Format (PDF) - ISO 32000-1:2008. Two separate CD/DVDs are required, one shall contain the Use and Installation manual and one shall contain the Maintenance and Service manual.

The statement of copyright release:

“REPRODUCTION AND DISTRIBUTION OF THIS TECHNICAL MANUAL IS
AUTHORIZED FOR U.S. GOVERNMENT PURPOSES.”

shall be printed in the first two pages of each technical manual and on the surface of the CD/DVD supplied.

- 4.7 Wireless Connectivity Any capability of the equipment to communicate wirelessly, including but not limited to Wi-Fi and Bluetooth shall be disabled.
- 4.8 Training Materials Training materials that demonstrate the features, detailed operations and procedures with step-by-step instructions for using the equipment shall be provided. The training material shall be delivered in technical manual format or interactive CD-ROM format.
- 4.9 Additional Requirements
- 4.9.1 Human Readable Identification Labeling:
- 4.9.1.1 Equipment: Per MIL-PRF-28800F, a human readable label shall be provided for all production lot units conforming with MIL-STD-130N and permanently affixed on the equipment in an easily readable location. Required fields on the label are; CAGE, part number, and serial number. Size of the label shall conform to the size of the equipment.
- 4.9.1.2 Case: Per MIL-PRF-28800F, a human readable metal plate shall be provided for all production lot units conforming with MIL-STD-130N and permanently affixed to the front of the transit case. Required fields on the label are; CAGE, part number, and serial number. Size of the label shall conform to the size of the case. Pressure sensitive adhesive transfer tape is required to hold the plate to the hard transit case such as 3M™ 9472LE. Soft transit cases also require labeling with permanent placement such as a metal plate affixed with rivets, screws or adhesives.
- 4.9.2 Shipping container: For production lot units the package or carton containing the equipment for shipment shall be marked per MIL-STD-129P.
- 4.9.3 Other Additional Requirements: Shall be specified in the CDRL of the solicitation.