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INCH-POUND
A-A-59915
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COMMERCIAL ITEM DESCRIPTION

CONVERTER, FREQUENCY, ELECTRONIC, SOLID-STATE
25 kVA, 400 Hz

The General Services Administration has authorized the use of this Commercial Item Description for all federal agencies.

1. SCOPE. This Commercial Item Description (CID) describes a 25 kilovolt-ampere (kVA), Solid-State Frequency Converter herein referred to as the SSFC. The SSFC has a 115/200 volt, 400 Hertz (Hz) output rating to provide power for various aircraft maintenance tasks as commonly encountered in avionics backshop environments.

2. SALIENT CHARACTERISTICS

2.1 Safety and environmental. The equipment shall meet all safety and environmental requirements as specified in National Fire Protection Association (NFPA) 70 – National Electrical Code (NEC), ANSI/IEEE C2 – National Electrical Safety Code, and the latest applicable National Electrical Manufacturer's Association (NEMA) standards except as stated herein.

2.2 Component protection. All space in which work is performed during operation, service, and maintenance shall be free of hazardous protrusions, sharp edges, or other features which may cause injury to personnel. All rotating and reciprocating parts and all parts subject to high operational temperatures or subject to being electrically energized, that are of such nature or so located as to be hazardous to personnel, shall be guarded or insulated to eliminate the hazard. All wires, cables, tubes, and hoses shall be supported and protected to minimize chafing and abrasion and shall be located so as to provide adequate clearance from moving parts and high operational temperatures. Grommets shall be provided wherever wires, cables, tubes, or hoses pass through bulkheads, partitions, or structural members.

Comments, suggestions, or questions on this document should be addressed to: Support Equipment & Vehicles Division, ATTN: (AFLCMC/WNZEA), 235 Byron Street, Suite 19A, Robins AFB GA 31098-1813. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil .

AMSC N/A FSC 6130

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2.3 Design and construction. The SSFC shall be a stand-alone, self-contained unit capable of converting three phase 50 and 60 Hz Alternating Current (AC) facility electrical power into 115/200 volt 3-phase electrical power at 400 Hz. The SSFC shall accept any power input specified herein; all SSFC operating power shall be derived from the input power source. The SSFC shall be constructed of modular and easily replaceable subassemblies and components wherever possible. The SSFC enclosure shall have doors or covers to provide access for maintenance, repair, and replacement of components and subassemblies. All doors shall be vertically hinged and equipped with hold-open devices for satisfactory use in high wind and jet blast areas. Removable panels, if provided, shall be attached with captive fasteners. The SSFC shall be Underwriter's Laboratory (UL) 1012 listed. The SSFC shall be designed and constructed in accordance with all applicable European Union (EU) requirements in order to have the "CE" marking affixed (see 2.6). The SSFC shall be able to withstand the strains, jars, vibrations, and other conditions indicative to shipping, storage, installation, and service. Additional features and capabilities shall be permitted unless otherwise prohibited by this document.

2.4 Foreign object damage (FOD). All loose metal parts, such as pins or connector covers, shall be securely attached to the SSFC with wire ropes or chains. "Dog tag" style beaded chains shall not be provided.

2.5 Materials, protective coatings, and finish.

2.5.1 Protective coatings. Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during the service life of the item shall not be used or shall have means of protection against such deterioration that does not prevent compliance with the performance requirements specified herein. Protective coatings that chip, blister, crack, peel or scale with age or extremes of climatic conditions or when exposed to heat shall not be used. Fasteners, handles, and fittings used in the assembly of the item shall also be primed and painted unless they are specifically designed to resist corrosion and deterioration without paint.

2.5.1.1 Finish. The exterior finish color of the SSFC shall be Gray, Color Number 26173 of FED-STD-595.

2.5.1.2 Exclusion of water. The design of the SSFC shall be such as to prevent water leaking into, or being driven into, any part of the SSFC interior when either in an operating or travelling configuration. All windows, doors, panels, covers, etc., shall be provided with sealing arrangements such that the entry of water is minimized when these items are correctly closed. Particular care shall be taken to prevent wetting of equipment and heat and sound proofing materials. Sharp corners and recesses shall be avoided so that moisture and solid matter cannot accumulate to initiate localized attack. Sealed floors with suitable drainage shall be provided for storage compartments and other areas in the SSFC that could collect and retain water.

2.5.1.2.1 Fluid traps and faying surfaces. There shall be no fluid traps on the SSFC. Faying surfaces of all structural joints, except welded joints, shall be sealed to preclude fluid intrusion.

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2.5.1.2.2 Ventilation. Ventilation shall be sufficient to prevent moisture retention and buildup.

2.5.1.2.3 Drainage. Drain holes shall be provided to prevent collection or entrapment of water or other unwanted fluid in areas where exclusion is impractical. All designs shall include considerations for the prevention of water or fluid entrapment and ensure that drain holes are located to effect maximum drainage of accumulated fluids. The number and location of drain holes shall be sufficient to permit drainage of all fluids when the unit is in a 3 degree incline in any plane. The minimum diameter of the drain holes shall be 0.25 inch.

2.6 Identification and information plates and marking. An identification plate in accordance with MIL-STD-130 shall be securely attached to the SSFC in a readily accessible location. The identification plate shall contain the following information: Nomenclature, part number, serial number, date of manufacture, manufacturer's name, Commercial and Government Entity (CAGE) code, date of warranty expiration, and National Stock Number (NSN). The SSFC and any of its components for which the Government's unit cost is more than $5,000, is serially managed, or the procuring agency determines is mission essential, shall have Unique Identification (UID) (also known as Item Unique Identification (IUID)) information permanently affixed on or near the respective identification plate(s), marked in accordance with MIL-STD-130. UID information shall be included as both a bar code and human readable markings. The "CE" marking shall be affixed in accordance with EU requirements on or adjacent to the identification plate. All external devices and components which require operational or maintenance interface shall be marked using manufacturer's standard markings.

2.7 Calibration and maintenance adjustments. The design of the SSFC shall provide for readily accessible calibration adjustments and maintenance adjustments. Any calibration adjustments shall be provided by variable value components adjustable by the use of a simple means. The calibration by substitution of selected components or parts is unacceptable unless specifically approved. The calibration interval shall be a period of one year or greater, based on an operating time of 2,000 hours. The SSFC shall be able to be serviced and visually inspected without removal of panels or components. All major components of the SSFC shall be easily removable for ease of maintenance.

2.8 Special tools. The design of the item shall minimize the requirement for special tools (see 6.3.2). All special tools shall be provided with, and stored on, the SSFC.

2.9 Accessories. Accessories to be supplied by the manufacturer with each deliverable SSFC shall include standard and optional accessories as provided by the manufacturer and listed in the manufacturer's catalog or data sheet. A written user's manual, a written programmer reference manual (if applicable), and a traceable calibration certificate shall also be provided with each SSFC unit. The user's manual(s) shall include complete details for the installation, operation (including parallel operations), troubleshooting, maintenance and calibration of the SSFC and shall include interconnect drawings and electrical schematics for all power and control circuits and devices. A complete parts listing shall be delivered with each SSFC and shall include, at a minimum, the original manufacturer's name, part number, rating, identification and quantity required.

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2.10 Environmental requirements. The SSFC shall be designed for indoor and outdoor use and indoor storage. The SSFC shall be primarily for use on floors of equipment rooms, aircraft hangars and exposed aircraft apron and flight line areas.

2.10.1 Operating temperature. The equipment shall meet its functional and accuracy requirements in an operating environment of -20 degrees Fahrenheit (F) to +125 degrees F.

2.10.2 Non-operating temperature. The equipment shall meet its functional and accuracy requirements after being in a non-operating environment (Storage Temperature) of -65 degrees F to +160 degrees F.

2.10.3 Altitude. The SSFC shall be capable of operation from sea level to 10,000 feet (ft) and with no derating from sea level to 7000 ft. Non-Operational altitude range shall be sea level to 40,000 ft.

2.10.4 Humidity. The SSFC shall be capable of operation and storage (non-operation) from 5 to 95% (±5%) relative humidity, including conditions where condensation takes place in the form of water and frost.

2.10.5 Solar radiation. The SSFC shall not be adversely affected by full time exposure to solar radiation, such as those conditions encountered in desert like environments.

2.10.6 Fungus. All materials used in the SSFC shall be fungus resistant or shall be suitably treated to resist fungus. The SSFC shall be suitable for use in conditions encountered in a tropical environment.

2.10.7 Explosive atmosphere. The SSFC shall be suitable for use above hazardous areas as defined in NFPA 70 Article 513.3(B) and shall not have any live components within 18 inches of the floor. The SSFC shall be safe to operate outside a 20 ft distance of fueled equipment as typically encountered in garages and hangars, to include but not be limited to: Diesel-powered aircraft support equipment, fuel tanks, or aircraft. The SSFC shall function properly without hazard to the unit, personnel, and surrounding equipment within this range.

2.10.8 Acoustical noise. The maximum allowable acoustical noise of the SSFC is 68 Decibels at 7 meters from the perimeter of the unit, measured at any direction.

2.11 Physical. The SSFC shall meet the physical characteristics listed below. The SSFC shall be designed to be as small and lightweight as practical to meet the characteristics listed herein. The SSFC shall make maximum use of non-corrosive/corrosive resistant materials to reduce corrosion-related issues, i.e. rust, fungus, mildew, pitting, etc. The use of composite materials, where applicable, is encouraged. 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.

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2.11.1 Size. The SSFC shall not exceed the following critical values:

Depth	24 inches
Width	38 inches
Height	76 inches (not including lifting eyes)
Weight	850 pounds

2.11.2 Mobility/transportability. Provisions for external lifting and transport by forklift shall be provided. The SSFC shall be transportable by all current military cargo aircraft, spring-ride truck or trailer, railcar, boat, and ship (palletizing or crating allowed). The unit shall be equipped with sufficient tie down devices to ensure proper security while being transported.

2.11.3 Enclosure. The enclosure of the SSFC shall be designed and constructed to meet the intents of NEMA Type 4 protection while allowing for ventilation of the electronics internal to the unit. A split unit design of NEMA 4 for controls and NEMA 3R for magnetics is also acceptable. The SSFC shall permit safe operation in inclement weather conditions to include, but not be limited to: Wet/damp, dry/dusty, hot/cold, or any combination thereof. Openings in the SSFC enclosure to allow input/output cable entrance shall be sealed from the elements. Access doors or covers for maintenance, calibration and cleaning shall be provided as listed in 2.3.

2.11.4 Workmanship and wiring. The SSFC shall be manufactured with the best commercial practices and be free from defects. All wiring shall be permanently marked and each wire must be uniquely identified. All internal wiring shall be securely supported, neatly routed and protected against chafing, excess heat and strain.

2.11.5 Input and output terminations. The SSFC shall have areas where conduit or cables can be connected for the input and output power connections. Input and output power terminal blocks shall be provided for making the proper connections. The input and out terminals of the SSFC shall be sized accordingly to handle the currents required for each phase. Neutral and Ground terminals shall be sized accordingly.

2.11.6 Neutral-to-ground bond. The SSFC shall come from the manufacturer with a removable neutral-to-ground bonding jumper sized in accordance with the National Electrical Code, NFPA 70.

2.12 Functional. The SSFC shall have the functional characteristics listed below:

2.12.1 Fire prevention and safety. The enclosure of the SSFC shall employ best commercial design practices to reduce the danger to personnel from fire and explosion. Suitable vents and drains shall be incorporated into the enclosure of the SSFC to reduce the risk of hazard.

2.12.2 Door interlock. When any access door or panel is opened, safety interlock circuitry shall open the input power device and power output device and not allow the input or output devices to close while doors or panels are open. A bypass switch to defeat the interlock circuitry shall be provided for maintenance purposes.

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2.12.3 Automatic capacitor discharge. The SSFC shall be designed so that when the unit is turned off under normal procedures or the Emergency Stop switch is activated all link and capacitive devices are discharged to prevent hazardous voltages from remaining in the unit. The discharge rate shall be selected to prevent damage to the components. No voltage greater than 15 Volts shall exist on the load side of the input control device five (5) minutes after the unit is turned off.

2.12.4 Input circuit breaker/contactor. The SSFC shall be equipped with a manual device for opening and closing the input control device. If a circuit breaker is used for this purpose it shall be a heavy duty three pole breaker in accordance with UL 489 rated for switch use.

2.12.5 Output circuit breakers/contactor. The SSFC shall be equipped with an electro-mechanical device for application of output power to the output connections. The device shall be manually operated from the front panel by the user to normally open and close the output circuit. The output device shall immediately open when input power is removed and during abnormal/alarm conditions and shall fully isolate the output circuit both electrically and physically (open contacts) from the SSFC. If a circuit breaker is the output device, it shall be rated for this use in accordance with UL 489. The output device shall be protected from arcing damage by halting the generation of output voltage immediately prior to opening the output circuit, use of arc suppression devices/methods, or other suitable means. All devices operating at 400 Hz shall be rated for 400 Hz operation.

2.12.6 Illumination. Lighting shall be provided for all meter faces, indicators and controls so the SSFC may be operated under low ambient lighting condition. All lighting shall be controlled by the means of a single switch located on the control panel.

2.12.7 Operation cycles. The SSFC shall be designed to operate for continuous operation as well as intermittent operation, within the conditions stated herein, with no damage to components.

2.13 Electrical. The SSFC shall have the electrical characteristics listed below. Electrical properties shall be adequate to fulfill the requirements listed below and shall be the continuous duty ratings of the units.

2.13.1 Voltage adjustment and automatic line drop compensation (ALDC). The SSFC shall provide for remote voltage sensing and regulation. The SSFC shall provide both a manual adjustment (±10%, minimum) and an automatic voltage adjustment to compensate for connected line losses. The ALDC method shall adjust the output voltage within a 0 to 15% range for compensation at the power factor range listed in paragraph 2.14.1. The SSFC shall automatically revert to local output terminal sensing if a break or fault occurs in any part of the remote voltage sensing circuit. The SSFC shall have a switch to manually select the compensation method. Automatic line drop compensation shall be operational in both single and parallel configurations.

2.13.2 Automatic parallel operation. The SSFC shall be capable of automatic parallel to other like units of the same kVA rating. The SSFC shall automatically synchronize and share load equally (within ± 5%). Any cables required to support parallel operation shall be provided (20

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feet in length) with each SSFC. Each SSFC shall include provisions for secure storage of the provided interconnection cables.

2.13.3 Electrical grounding. Electrical grounding shall be accomplished in accordance with NEC, Section 250. If the AC input electrical cable requires the use of a neutral connector it shall be grounded to the main frame and chassis of the SSFC.

2.13.4 Input power characteristics. The SSFC shall operate with 3-phase, 4-wire, grounded, Alternating Current (AC) of delta and wye configured power inputs.

2.13.4.1 Input voltage and frequency. The SSFC shall be capable of accepting inputs from different 3-phase voltage systems and provide continuous output power ratings with the inputs listed below. The SSFC shall be set at the factory to accept a 480 volt AC (VAC) input.

60 (± 5%)Hz:	208 (± 10%) 3 ph VAC
	480 (± 10%) 3 ph VAC
50 (± 5%)Hz:	380 (±10 %) 3 ph VAC

2.13.4.2 Input phase sequence. The SSFC shall accept any input power phase sequence.

2.13.4.3 Input power factor. The SSFC shall accept input power with a power factor of 0.7 to 1.0. SSFC input power factor shall not be lower than 0.85, lagging.

2.13.4.4 Input current distortion. The percent total harmonic distortion with normal input voltage while providing rated output shall not exceed 10%.

2.13.4.5 Input surge protection. The SSFC shall be capable of sustaining an input surge described in and tested in accordance with IEEE C62.41, location category B/C, and continue to operate with no alarms within the specified tolerance.

2.13.4.6 Input starting current limit. Initial starting/surge current shall be limited to 150% of normal full-load input current.

2.13.5. Output power. The SSFC shall provide the output power characteristics listed below.

2.13.5.1. Output voltage and frequency. The SSFC output voltage shall be three phase, 115/200 VAC, WYE configured with a grounded neutral with an output frequency of 400 Hz. The output voltage shall be user adjustable ±10% minimum and shall be regulated to ±1% at all settings from zero to full load under rated operational temperatures and with up to 15% unbalanced loads. Output frequency regulation shall be better than ±0.05% under all conditions of operating temperature, acceptable input voltage and frequency conditions and loads (see 2.10.1, 2.13.4.1 and 2.14.1). The DC component in the output voltage shall not exceed ±0.1 volts. The SSFC shall operate as specified with both Delta and WYE configured loads. The output voltage crest factor shall be 1.360 to 1.470 at AC steady state line-to-neutral voltages between 108 to 118 VAC.

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2.13.5.2. Output phase sequence. The phase sequence of the SSFC output voltage shall be a positive sequence of A-B-C (AB-BC-CA).

2.13.5.3 Output phase angle regulation. The displacement angle between adjacent voltages shall be 120 Degrees (± 2 Degrees) for the balanced load and shall be 120 Degrees (± 4 Degrees) for the three phase 15 percent unbalanced load.

2.14 Operational. The SSFC shall operate continuously as well as intermittently at any load with the characteristics listed below.

2.14.1. Output power rating. The SSFC shall be capable of providing 25 kVA continuously into a load with a power factor between 0.8 leading and 0.8 lagging and 20 kilowatts into a purely resistive load. The output voltage shall be maintained within the stated tolerances under all load conditions within these limits.

2.14.2 Overload/overcurrent. The SSFC shall not be tripped or sustain damage during the following overload/overcurrent conditions:

Percent of Full Load	Satisfactory Operating Time
110 Percent	30 Minutes
125 Percent	10 Minutes
150 Percent	2 Minutes
300 Percent	6 Seconds

2.14.3 Unbalanced loads. The SSFC shall be capable of supplying a 15% maximum unbalanced load. The unbalanced load of 15% shall be defined as one the three phases at its full load condition and the remaining two phases at 85% of their full load condition.

2.14.4. No-load input losses. The SSFC shall have no-load input losses no greater than 6% of the total output kVA rating.

2.14.5 Efficiency. The minimum efficiency of the SSFC shall be at least 87 percent at 50% load condition and 91% at full load condition.

2.14.6 Short circuit. The SSFC shall be capable sustaining short circuit fault currents without damage and tripping the protective input and output devices on two line and three line phase-to-phase faults and one line and two line phase-to-ground faults.

2.14.7 Total harmonic distortion (THD). The THD in the output voltage for the SSFC shall be as follows:

a. Balanced Load Condition: THD shall not exceed 3% line-to-line and line-to-neutral. Maximum single harmonic distortion shall not exceed 2% of the fundamental at the nominal voltage.

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b. Unbalanced Load Condition: THD shall not exceed 4% line-to-neutral with a 15% unbalanced load applied.

2.14.8 Amplitude modulation. The SSFC amplitude modulation shall not exceed 1% for no load to full load condition.

2.14.9 Frequency stability. The SSFC frequency regulation shall be independent of the load changes. The frequency stability of the SSFC shall be 400 Hz (± 0.5%) for all load conditions.

2.14.10 Transient output voltage and frequency recovery. The SSFC transient output voltage and frequency recovery shall be in accordance with MIL-STD-704 (Figure 3 and 5, respectively).

2.14.11 Electromagnetic/radio frequency interference (EMI/RFI). SSFC EMI and RFI levels shall be compatible with aircraft avionics systems and shall not cause interference to occur with these systems while operating with SSFC power applied.

2.15 Human machine interface (HMI). The SSFC shall have the following HMI characteristics:

2.15.1 Control panel. The SSFC shall have a centrally located, easily accessible user control panel. The control panel shall house and contain all controls, meters, switches, indicators, etc. necessary to operate the SSFC. The frequency meter shall be accurate to within 1 Hz. All other meters and metering transducers shall provide for better than 2% accuracy and have overload protection. All meters and indicators shall be readable in all lighting conditions from total darkness to full sunlight.

2.15.1.1 Voltmeter. A voltmeter with a selector switch to select output Phase-to-Neutral Voltages and Phase Line-to-Line voltages shall be provided on the SSFC control panel. The voltage selector switch shall also have an OFF position.

2.15.1.2 Ammeter. An ammeter with a selector switch to select line currents shall be provided on the SSFC control panel. Ammeter selector switch shall also have an OFF position.

2.15.1.3 Frequency meter. A meter shall be provided on the control panel to indicate the output frequency of the SSFC. The meter shall have an ON-OFF switch and a range of 390-410 Hz.

2.15.1.4 Elapsed time meter. A meter shall be provided on the control panel to indicate the total hours of usage (output contactor closed) on the SSFC. The range of the elapsed time meter shall be not less than 99,999 hours.

2.15.2 Indicator lights. Lamps or light emitting diodes (LED) shall be provided on the SSFC control panel to indicate machine status.

2.15.2.1 Power production indication. A lamp or LED shall be provided to notify the operator that the unit is in the "RUN" mode and the output contactor is "OPEN" or "CLOSED". Note: Lighted switches are also acceptable for this requirement.

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2.15.2.2 Input circuit breaker/contactor on indicator. A lamp or LED to indicate that the SSFC input circuit breaker/contactor is closed and power is being applied to the SSFC shall be provided on the control panel.

2.15.2.3 Output circuit breaker/contactor on. A lamp or LED shall be provided on the control panel to clearly indicate that the SSFC output circuit breaker/contactor is closed.

2.15.2.4 SSFC parallel operation indicator. A Master/Slave parallel operation lamp or LED shall be provided on the control panel to indicate when the SSFC is in either master or slave operation mode.

2.15.2.5 System alarm indicator. A lamp or LED to indicate that fault conditions exist shall be provided on the SSFC control panel. This indication shall be latched in the ON position during alarm condition and shall remain ON until the alarm reset push-button is pressed.

2.15.3 Start & stop push-button. A start push-button shall be provided on the control panel to operate the internal operations of the SSFC; it shall not close the output control device. A stop push-button shall also be provided to shut off the internal operations of the SSFC.

2.15.4 Emergency stop push-button. An emergency stop push-button shall be provided on the control panel to immediately cease SSFC operations and turn off (trip) the input breaker and open the output power device. The SSFC shall be prevented from restart until the emergency stop push-button is manually reset.

2.15.5 Audible alarm. An audible alarm to sound the SSFC alarm condition shall be provided on the control panel.

2.15.5.1 Alarm annunciator. The SSFC shall be capable of detecting and displaying the following abnormal conditions:

Input Over/Under Voltage	Output Over/Under Voltage
Input Over Current	Output Over Current
Control Logic Failure	Cooling Air Flow Failure/Over Temperature

2.15.5.2 Alarm silence. A push button to silence the SSFC audible alarm shall be provided on the control panel. This device shall not clear the fault, other fault indicators or prevent subsequent faults from being alarmed.

2.15.5.3 Alarm reset. The SSFC shall be provided with a device to reset or clear all alarm or test failure indications. This device shall not prevent a fault from being displayed again if it is still valid.

2.15.6 Push-to-test button. A push-to-test button or switch shall be provided to test the indicating lamps, LEDs, alarm signals and other display panel indicators for the SSFC.

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2.15.7 Built-in-test-equipment (BITE). The SSFC shall be provided with BITE to monitor control, primary and protective circuits. The BITE shall retain and provide diagnostic and troubleshooting information for the unit. All the controls needed to operate or perform manual functions for the BITE features shall also be included.

2.16 Cooling. The SSFC shall have appropriately sized forced air cooling fans to allow the unit to properly function, without damage, continuously under all the conditions stated herein. The SSFC shall contain adequate protection circuitry and controls to protect the internal components and cease operation before overheating damage occurs in the event of a cooling air flow failure or other cooling related faults.

3. REGULATORY REQUIREMENTS.

3.1 Recycled recovered 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. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR). However, used, rebuilt, or refurbished items shall not be provided.

3.2 Green Procurement Program. Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100% of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired: a) competitively within a reasonable timeframe; b) meet appropriate performance standards, or c) at a reasonable price. The prime contractor is responsible for ensuring that all subcontractors comply with this requirement.

4. PRODUCT CONFORMANCE PROVISIONS.

4.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale to the Government or in the commercial market place. The Government reserves the right to require proof of such conformance.

4.2 Avionics compatibility testing and evaluation. A production SSFC shall be subjected to avionics compatibility testing and evaluation. The testing and evaluation period shall be conducted on site at a US Air Force base within the United States. The full shipping address will be specified in the contract.

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4.3 Test rejection criteria. Throughout all tests specified herein, the SSFC shall be closely observed for the following conditions, which shall be cause for rejection.

a. Failure to conform to design or performance requirements specified herein or in the contractor's technical proposal.

b. Any spillage or leakage of any liquid, including insulation oil, lubricant, or other fluid, under any condition.

c. Structural failure of any component, including permanent deformation, or evidence of impending failure.

d. Evidence of excessive wear. If excessive wear is suspected, the original equipment manufacturer's (OEM's) specifications or tolerances shall be used for making a determination.

e. Evidence of corrosion or deterioration.

f. Misalignment of components.

g. Conditions that present a safety hazard to personnel during operation, servicing, or maintenance.

h. Evidence of overheating including shutdown faults from transformer, logic or power electronics overheating under normal conditions described herein.

i. Electromagnetic (EMI) or radio frequency interference (RFI) with avionics systems, communications or with other avionics backshop systems.

4.4 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices, and is the same product offered for sale in the commercial marketplace. The Government reserves the right to require proof of such conformance. Proof of conformance may include, but shall not be limited to, the performance of operational tests, lab tests, modeling and simulation and delivery of reports and data from these tests.

4.5 Responsibility of inspection. Unless otherwise specified in the contract or CID, the contractor is responsible for the performance of all inspection, examination, and test requirements specified herein. Except as otherwise specified in the contract or CID, the contractor may use their own facilities or any other facilities suitable for the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to set forth in this description where such inspections, examinations and tests are deemed necessary to assure supplies and services conform to prescribed requirements.

4.6 Examination of product. Each production SSFC shall be examined to verify compliance with the requirements herein prior to accomplishing any other tests listed in 4.7. A contractor-

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generated, Government-approved checklist shall be used to identify each requirement not verified by a test or analysis, and shall be used to document the inspection results. Proper operation of each SSFC function shall be verified. Particular attention shall be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings.

4.7 Operational test. Each SSFC shall be operated at rated full load for not less than 15 minutes, after complete assembly and prior to shipment, to ensure all parts are functioning according to the manufacturer's requirements.

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

6. NOTES.

6.1 Source of documents.

6.1.1 Department of Defense and Federal documents. Department of Defense and Federal documents, except for GOST 10227-86, are available online at https://assist.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. A copy of GOST 10227-86 can be obtained from the Procuring Contracting Officer (PCO).

6.1.2 FAR. FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh PA 15250-7954. Electronic copies of the FAR may be obtained from https://www.acquisition.gov/far/index.html .

6.1.3 NFPA documents. NFPA documents may be obtained at www.nfpa.org/index.asp or from National Fire Protection Association 11 Tracy Drive Avon, MA 02322.

6.1.4 NEMA documents. NEMA standards may be obtained at http://www.nema.org/stds or from National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1752, Rosslyn, Virginia 22209

6.1.5 Underwriters Laboratories (UL) documents. UL documents copies may be obtained online at http://ulstandardsinfonet.ul.com/ or from: Underwriters Laboratories, 333 Pfingsten Road, Northbrook, IL 60062-2096.

6.1.6 European Union documents. EU documents may be obtained at http://europa.eu/index_en.htm or from 2 rue Mercier, L-2985, Luxembourg

6.1.7 Institute of Electrical and Electronics Engineers (IEEE) standards products may be obtained at http://www.standards.ieee.org or available from IEEE Operations Center. Phone: (800)678-IEEE. Mail: IEEE Operations Center, Sales Office, 445 Hoes Lane, PO Box 1331, Piscataway, NJ, 08854-4141, USA.

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6.1.8 The National Electrical Safety Code (ANSI C2) may be obtained at http://www.webstore.ansi.org or from: ANSI, Attn: Customer Service Department, 25 W 43rd Street, 4th Floor, New York, NY, 10036

6.1.9 The SAE standards may be obtained at http://www.sae.org or from: SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096.

6.2 Ordering data. The contract or ordering data should specify the following: CID document number, current version and date of CID.

6.3 Definitions.

6.3.1 Common hand tool. A non-powered tool that is likely to be found in a typical mechanic's toolbox. Common hand tools include open end, boxed end, combination, socket (both 6- and 12-point in both standard and deep-well), and hex key wrenches, in SAE sizes up to and including 1-inch and metric sizes up to and including 25-mm; ratchet handles, extensions, and swivels; slotted and Phillips-head screwdrivers; regular and snap-ring pliers; and a ball-peen hammer.

6.3.2 Special tool. A tool that is not commercially and readily available from a source other than the SSFC contractor.

6.4 Key words.

Generator
Self-contained unit
Solid-State
Stand-alone unit
Transportable

Custodians:
Air Force – 84

Preparing Activity:
Air Force – 84

Reviewers:
Air Force – 99

Agent:
Air Force – 99

(Project 6130-2012-004)

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 Online database at https://assist.dla.mil .