

MIL-E-85583/2(AS)
7 November 1986

MILITARY SPECIFICATION SHEET

ELECTRIC POWER GENERATING CHANNEL, VARIABLE INPUT SPEED,
12,450 TO 26,250 RPM, ALTERNATING CURRENT, 400 Hz,
40 KVA, AIRCRAFT

This specification sheet is approved for use by the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the unit described herein shall consist of this document and the latest issue of specification MIL-E-85583.

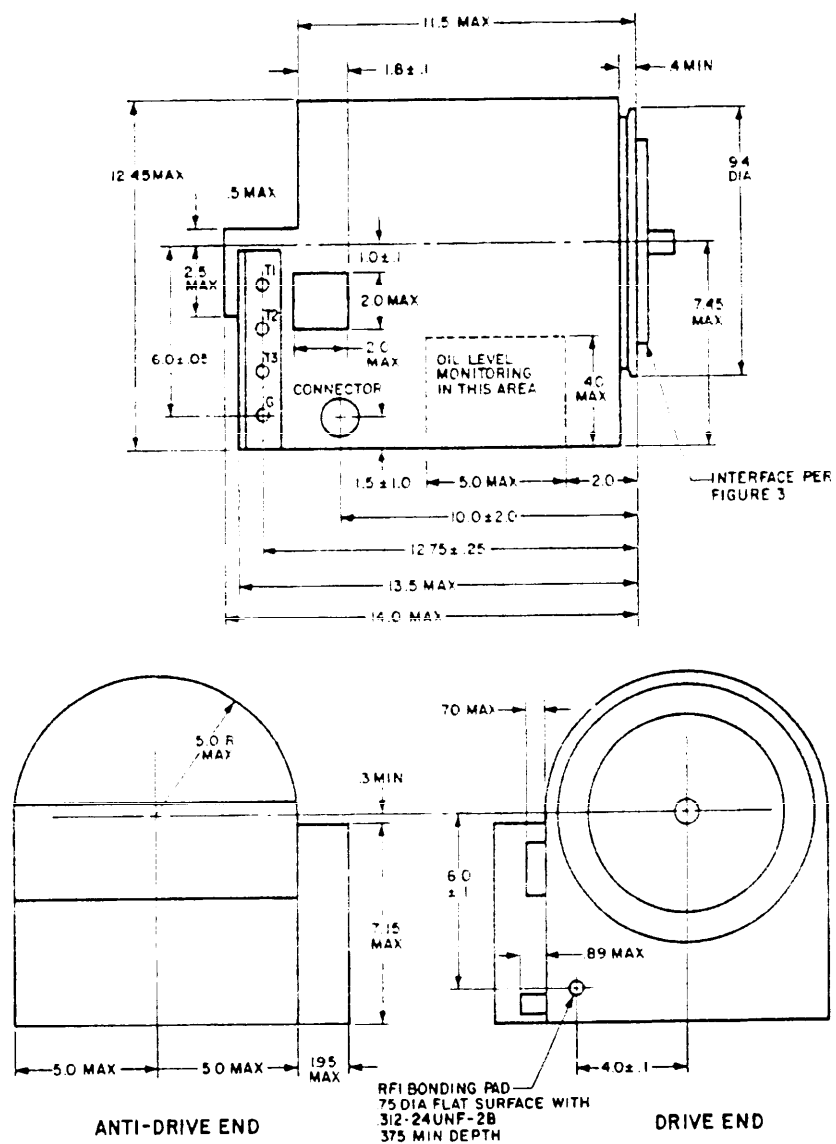
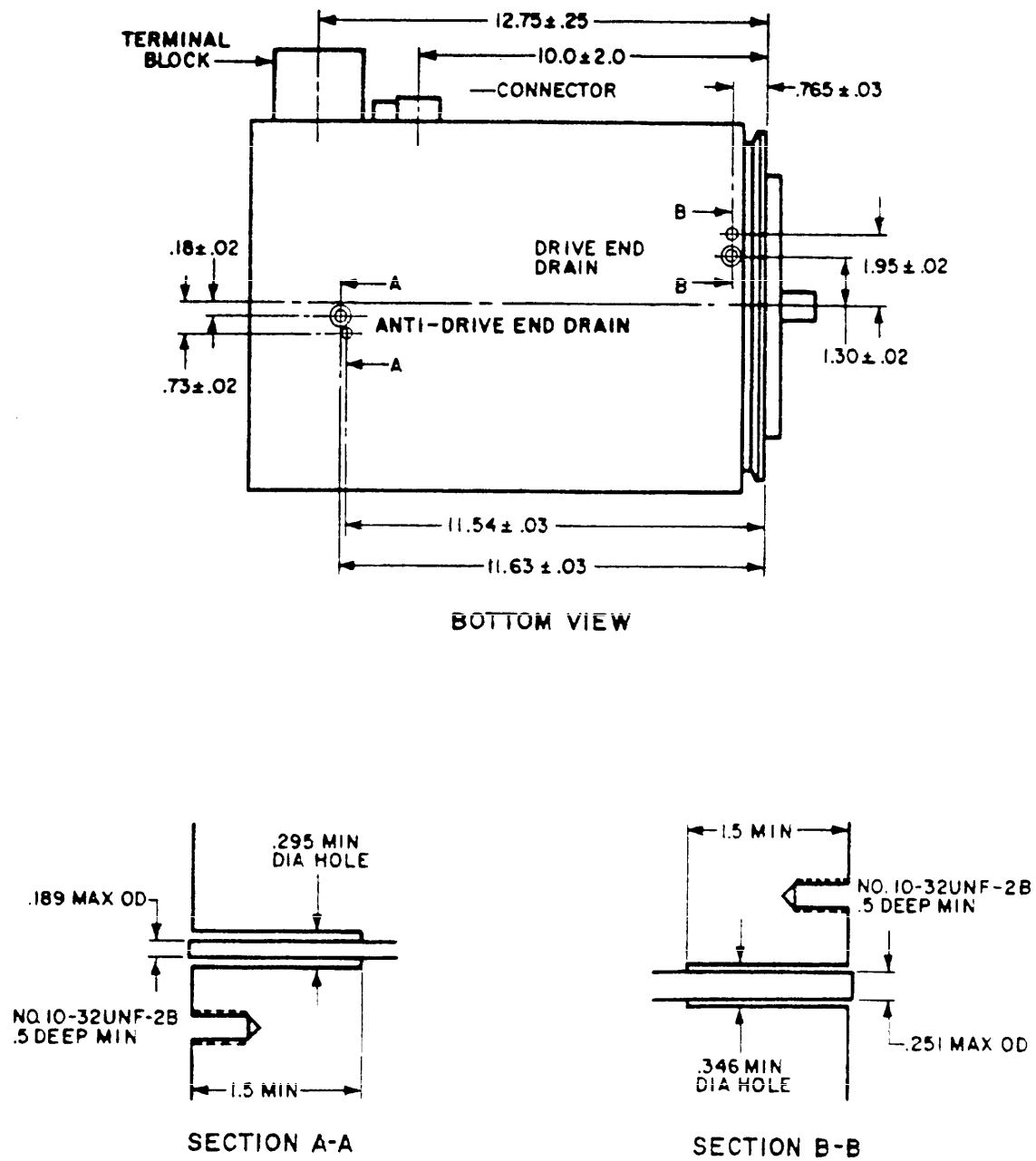


FIGURE 1. Generator package P/N M85583/2-2 (see Note 2).

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FIGURE 2. Generator package M85583/2-2, bottom view (see Note 3).

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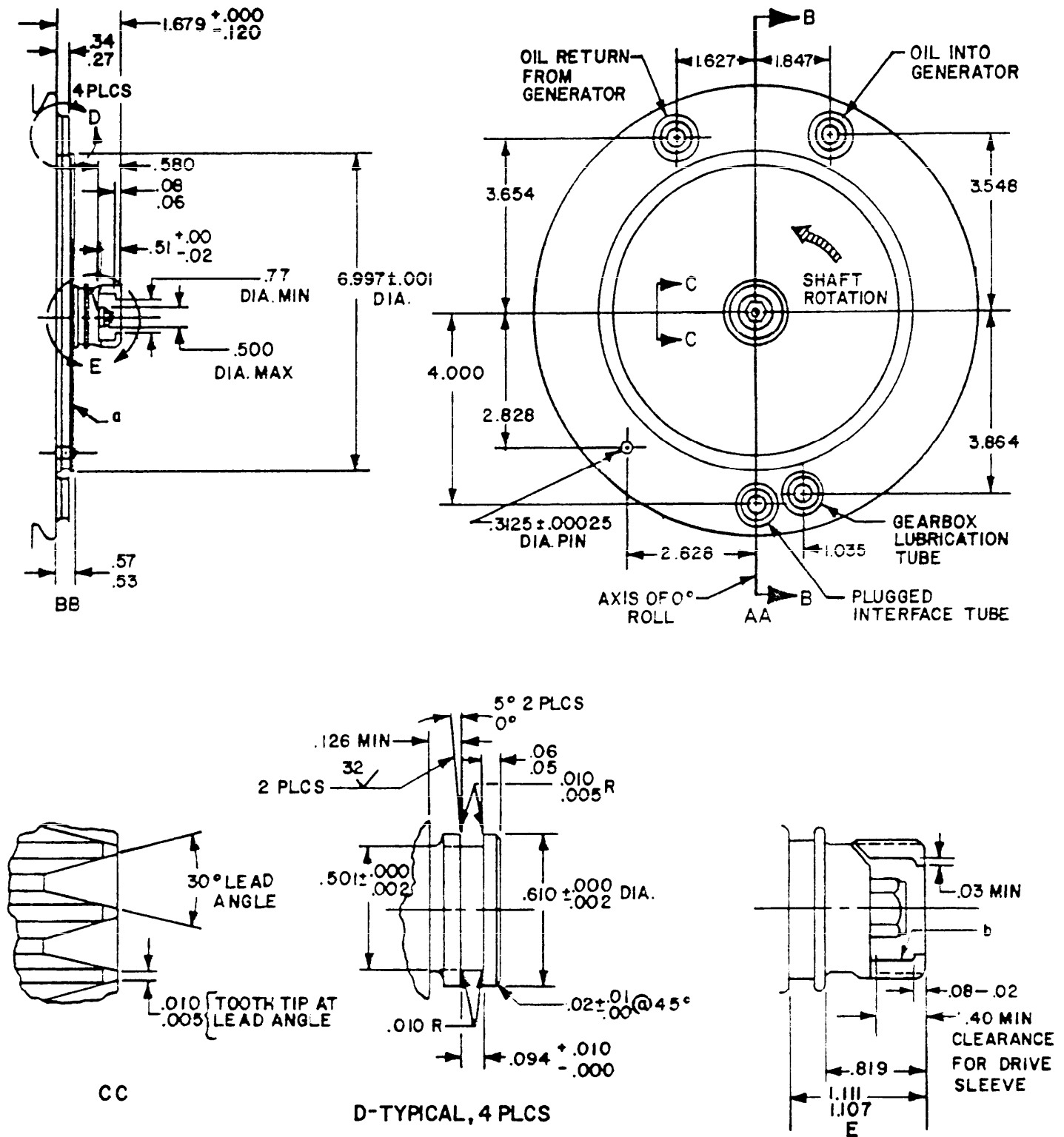


FIGURE 3. Generator package interface (see Note 4).

Turns Ratio:	1000:1 (+5 turns)
DC Resistance:	20 Ohms \pm 10%
Burden Impedance:	20 Ohms \pm 10%

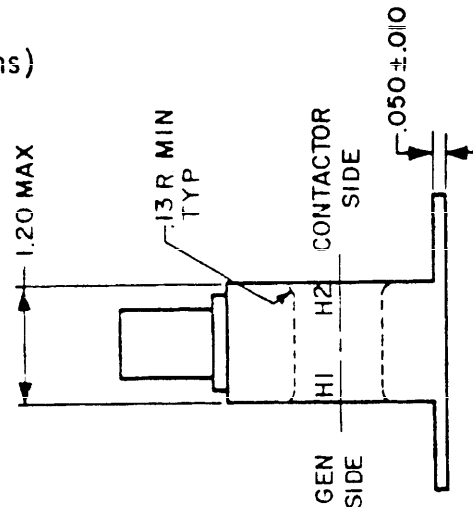
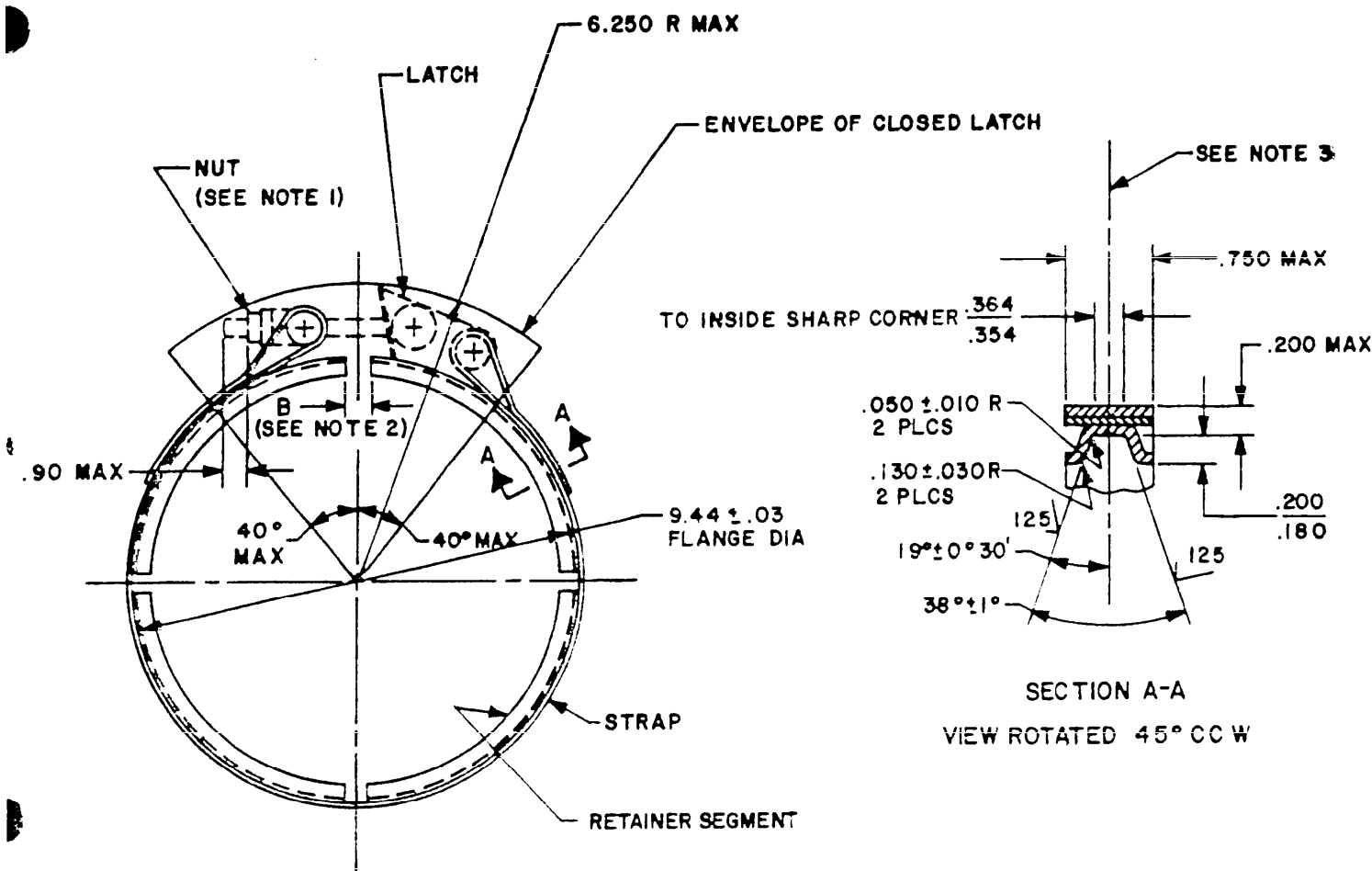


FIGURE 4. Current transformer assembly M85583/2-3.

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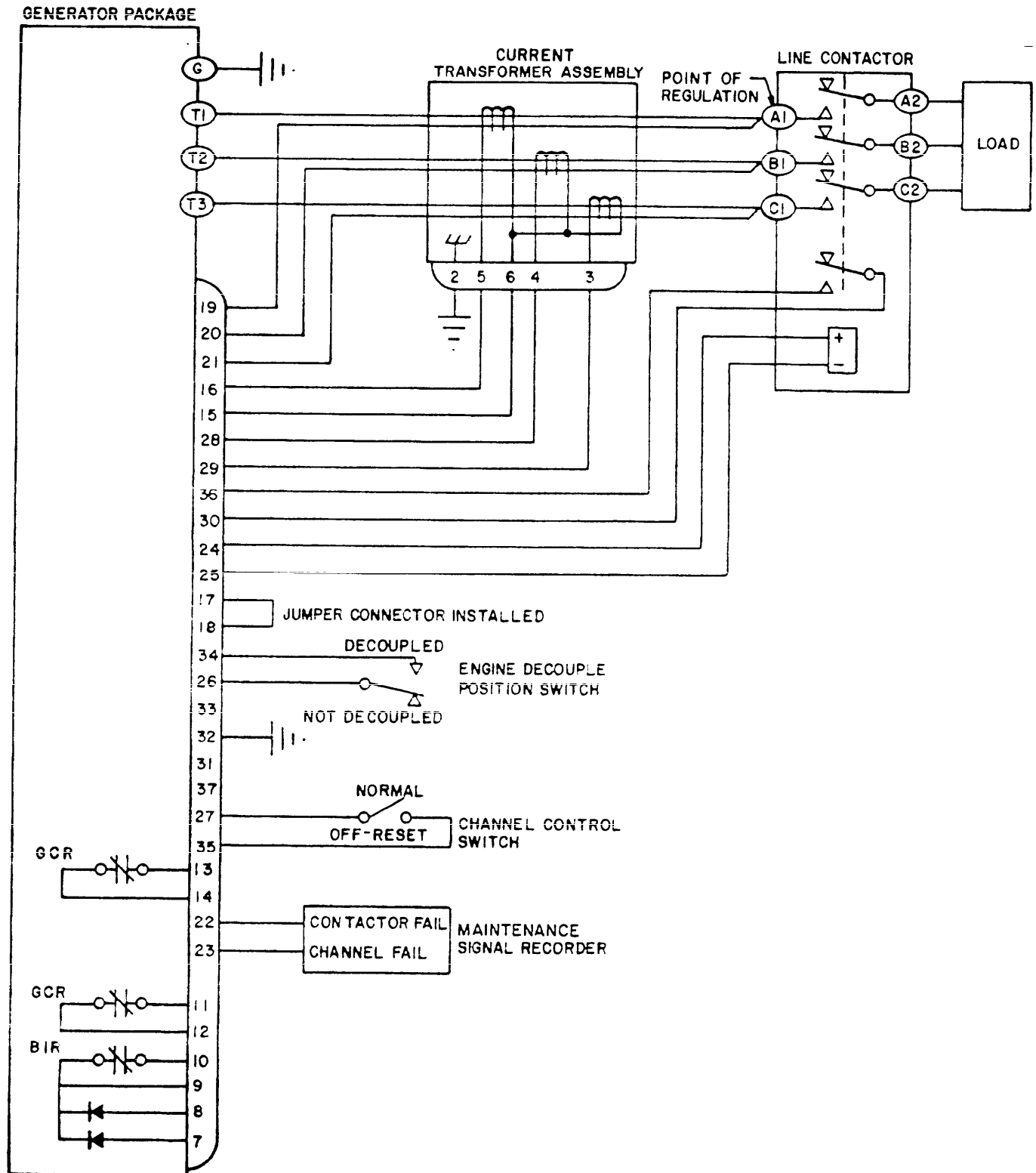


NOTES:

1. Nut, self 1kg (ESNA Z1200J-048) or equal to be torqued to 70 ± 10 in.-lb at installation. Torque requirement values to be etched on clamp strap.
2. Dimension "B" is: (a) $.25 - .55$ with clamp assembled to specified dia flange and tightened to specified torque; (b) 4.00 ± 2.00 with bolt unlatched.
3. Centerline of retainer segments is within $\pm .020$ of centerline of strap. Misalignment between any two adjacent segments shall not exceed $.040$. Strap warpage shall not exceed $.100$. All measurements to be made in completely free state, with clamp lying on edge on a surface plate under its own weight, and unlatched.
4. Dry film lubricant per MIL-L-8937 applied on inside surfaces of retainer segments.
5. QAD flange (mating surface) per MS3333-2, except as shown in Figure 3.
6. Coupling shall be capable of sustaining an axial load of 25,590 lbs without permanent deformation. The weight and overhung moment of attaching accessories shall not exceed 90 lbs and 630 in.-lbs, respectively. With this overhung moment, the coupling shall be capable of withstanding a level of random vibration of 17.8 grms from 50 to 2000 Hz for a time period of 2 hours in each of three mutually perpendicular planes.

FIGURE 5. Coupling clamp M85583/2-4.

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FIGURE 6. Single channel interconnection test diagram (see Note 5).

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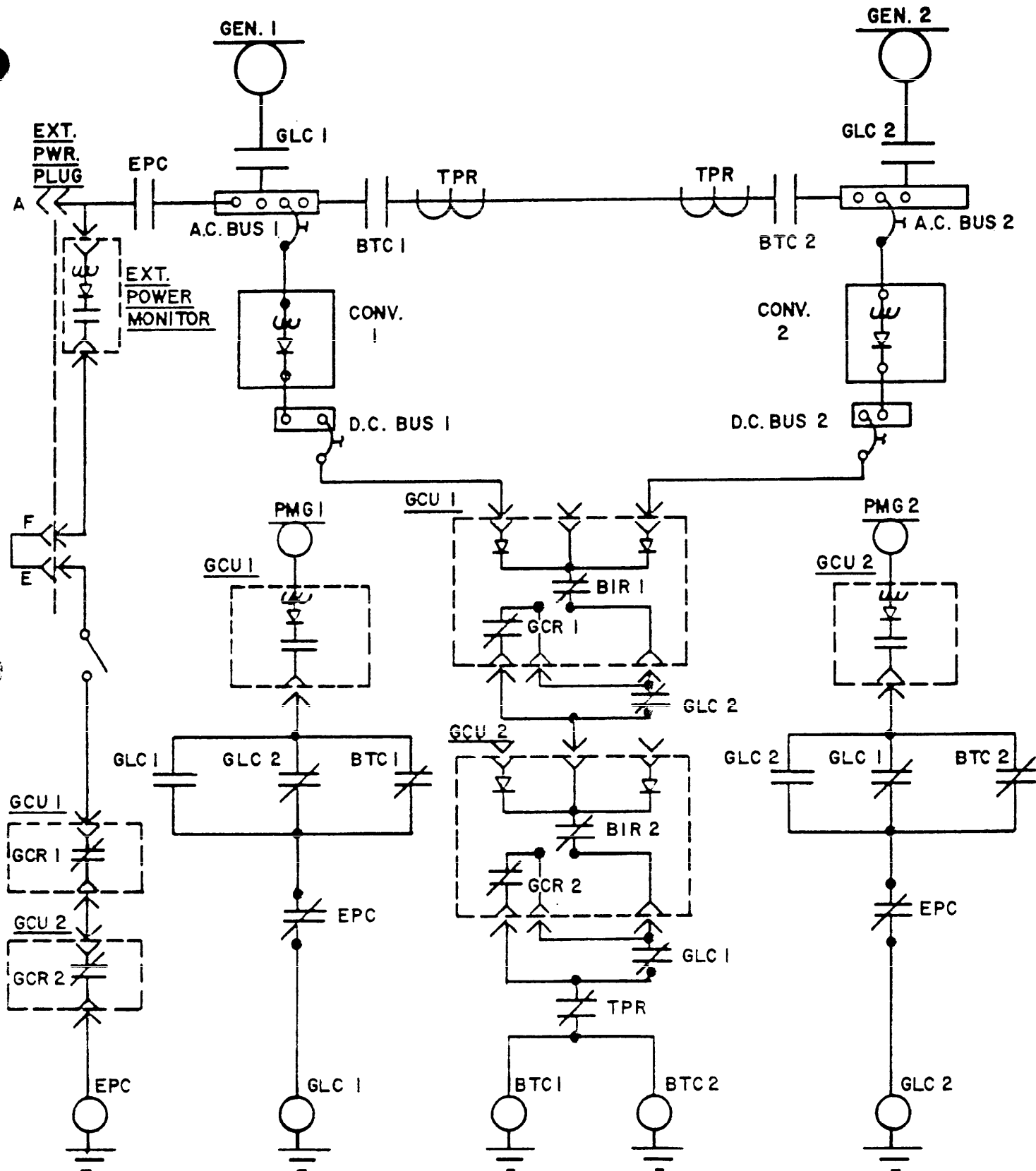


FIGURE 6A. Dual channel interconnection test diagram.

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Channel Output

AC Power

Rated output with generator package input shaft speeds of 15,300 to 26,250 RPM	40 KVA
Rated output with generator package input shaft speeds of 12,450 to 15,300 RPM	26 KVA
Rated output with generator package input shaft speeds of 15,300 to 19,800 RPM (see 3.5.1.1.5)	45 KVA

DC Power

Rated output at any input shaft speed AC output	
Power is available from the generator package	3 amps
Voltage	28 volts

Electric Power Generator Channel (P/N M85583/2-1).

The complete Electric Power Generating Channel consists of the following three parts:

1. Generator Package (P/N M85583/2-2)
2. Current Transformer Assembly (P/N M85583/2-3)
3. Coupling Clamp (P/N M85583/2-4)

Generator Package (P/N M85583/2-2) (Engine Mounted)

Configuration	Figures 1, 2, 3
Maximum weight	74.8 lbs (installed weight)*
Maximum overhung moment	500 in lbs
Input shaft	
Normal speed range	0 to 26,250 RPM
Cruise speed	21,000 RPM
Overspeed	27,337 RPM
Shear section	2,250 \pm 250 in lbs
Direction of rotation (viewing drive end)	CCW
Coolant	Oil
Pressure, flow, and type	See para 3.4.2.3
Continuous inlet temperature range	-40°C to +105°C
Maximum inlet temperature for 5 minutes	120°C
Maximum heat rejection	795 BTU/min
Ambient temperature from sea level to 50,000 ft	
Continuous	-55°C to 95°C
Maximum for 30 minutes	105°C
Maximum for 2.5 minutes	124°C
Ambient temperature at 60,000 ft	
10 minute duration	-55°C to 76.7°C
Ambient temperature at 70,000 ft	
1 minute duration	-55°C to 37.8°C
Maximum altitude	
Continuous	50,000 ft
10 minute duration	60,000 ft
1 minute duration	70,000 ft

*Installed weight includes all fluid required for operation.

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Current Transformer Assembly (P/N M85583/2-3) (Non-Engine Mounted)

Configuration	Figure 4
Maximum weight	.7 lbs
Ambient temperature	
Continuous	-55°C to 72°C
Maximum for 30 minutes	94°C
Maximum heat rejection	.12 BTU/min
Maximum altitude	70,000 ft

Coupling Clamp (P/N M85583/2-4) (Engine Mounted)

Configuration	Figure 5
Maximum weight	1.1 lbs

Requirements - The electric power channel and channel components utilizing the interconnecting wiring of Figure 6 shall meet the requirements of MIL-E-85583(AS) as modified below:

2.1.1 Specifications, standards and handbooks. Add the following documents:

MS-3333	Flange-Accessory, 8.000 BC Round, Design Standard for
MIL-L-85734	Lubricating Oil, Helicopter Transmission Systems, Synthetic Base
MIL-N-85353	Nut (Fasteners), Internally Threaded, Preload Locking, 450 Deg F, 800 Deg F, and 1200 Deg F, General Specification for
MIL-STD-810	Environmental Test Methods and Engineering Guidelines

3.4.1.1 Environmental requirements. Add: In addition to the electromagnetic compatibility requirements of MIL-E-81910, the following electromagnetic susceptibility requirements of MIL-STD-461 shall also apply: CE04, CS01, CS06, RS02. MIL-STD-461 shall be the applicable document for EMI requirements. Requirements for Method RS03 given in MIL-E-81910 shall apply except field intensity levels are changed to:

20 volts/meter from 14 KHz to 200 MHz
65 volts/meter from 200 MHz to 450 MHz
20 volts/meter from 450 MHz to 1.0 GHz
100 volts/meter from 1.0 GHz to 12.0 GHz
2 volts/meter from 12.0 GHz to 40.0 GHz (except that the level at 16.5 GHz and 33.0 GHz shall be 100 volts/meter)

Procedure CE03 is to be conducted over the frequency range of 20 KHz to 50 MHz rather than 150 KHz to 50 MHz. Procedure RE02 shall be conducted over the frequency range of 14 KHz to 10 GHz rather than 150 KHz to 1 GHz. Emissions and susceptibility testing shall be conducted on all channel components.

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Channel components shall be subjected to the vibration testing of 4.6.10, herein, in place of the vibration test of MIL-E-81910. The vibration qualification inspection required by Table I of the general specification shall be performed on two channels in accordance with 4.6.10(g). One channel shall be subjected to the vibration test of 4.6.10(g)(1) and the second channel shall be subjected to the vibration test of 4.6.10(g)(2). The system shall be capable of withstanding for 5 hours up to 25 g's vibration from 5,000 to 10,000 Hz when mounted on, and driven by, its airframe gearbox.

3.4.1.2 Channel control switch. Delete and add: Provisions shall be made so that the ac power source can be controlled by a single pole, single throw switch by which the following control functions are performed in the positions indicated.

NORMAL - The external switch circuit, shown in Figure 6 of this specification sheet, is open and the ac power source automatically energizes its bus when the output power electrical characteristics are within prescribed limits and the generator is above its minimum operating speed. Protective functions shall be operative.

OFF-RESET - In this position, the external switch circuit is closed and the ac power source is electrically deenergized and the generator feeder contactor is open. Protective functions and fault annunciation logic shall reset.

3.4.1.8 Threaded parts. Add: The use of MIL-N-85353 internal threaded forms is acceptable for limited use in critical applications internal to the generator package.

3.4.2.3 Cooling system. Add: The channel shall meet all of the requirements of this specification, within the generator package attitude envelope (Figure 7 herein), when supplied MIL-L-23699, MIL-L-7808, or MIL-L-85734 filtered cooling oil. Cooling oil filtered to 17/40 (normal/absolute) microns shall be supplied to the generator package from the gearbox through the oil inlet transfer tube shown on Figure 3 herein at a flow which varies with the input shaft speed as follows:

Start up - The oil flow available shall be zero GPM at zero RPM varying linearly up to a minimum of 6.5 GPM at 15,300 RPM.

Continuous operation - The oil flow available shall be a minimum of 6.5 GPM at 15,300 RPM varying linearly up to a minimum of 10.0 GPM at 26,250 RPM.

Five minute operation - The oil flow available shall be a minimum of 4.9 GPM at 15,300 RPM varying linearly up to a minimum of 8.5 GPM at 26,250 RPM.

One minute operation - The oil flow available shall be a minimum of 2.5 GPM at 15,300 RPM varying linearly up to a minimum of 4.3 GPM at 26,250 RPM.

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The maximum oil flow available to the generator package is limited to that flow which corresponds to a pressure drop of 132 PSI across the generator package. The generator package shall be compatible with nominal inlet oil pressures up to 200 PSI and with a maximum inlet oil pressure up to 450 PSI. The generator package shall not be damaged by continuous pressure pulsations up to $\pm 20\%$ from the nominal operating pressure at a cyclic rate up to 6000 Hz. In addition to the above, the generator package shall be capable of operating, without damage or tripping, with oil flow interruptions of up to 30 seconds immediately after being cooled at the maximum continuous coolant temperature and while supplying any load up to rated full load.

The channel shall operate with the interface cavity located between the generator package and the gearbox pressurized to any pressure between 5.45 psia and 21.2 psia. In addition the channel shall be capable of operating for 5% (maximum) of its total life at any interface cavity pressure between 4.36 psia and 5.45 psia without impacting either the performance requirements of this specification or the contractual warranty provisions.

Oil retained in the generator package during windmill operation (0-7000 RPM) and after the engine/gearbox shutdown shall not vary more than ± 4 fluid ounces from the operating fluid level of the installed generator package. The deceleration rate during shutdown may vary between 50 RPM/sec and 2500 RPM/sec.

The entrained air in the oil returned to the gearbox by the generator package at a pressure of 80 PSI shall not exceed 0.10 volumes of air to 0.9 volumes of solid oil under the continuous operating conditions of Figure 7 herein and shall not exceed 0.50 volumes of air to one volume of solid oil under the one minute operating conditions of Figure 7 herein.

Between 2.5 and 3.5% of the oil supplied to the generator package shall be returned to the interface cavity through either the gearbox lubrication tube, shown in Figure 3 of this specification sheet, or through the generator package side of the interface cavity such as by way of lubricating the drive end bearing. The interface cavity is scavenged by a pump in the gearbox. A sight glass, located as shown in figure 1, is required for designs with sealed coolant/lubricant systems to monitor for low oil levels. Up to 100 watts may be dissipated to the atmosphere by radiation and natural convection to cool low power electronics provided that operation is compatible with the required ambient temperatures. Dissipation of heat from high power electronics or the oil to the atmosphere shall be minimized.

3.4.2.4.1 Shaft speed. Delete the last sentence and add: During startup, with oil temperatures as low as -40°C , the channel shall withstand, without damage or subsequent impairment of performance, input speed accelerations and decelerations of up to 27,000 RPM per second from zero RPM up to any speed within the rated input speed range. Once the system comes on line, there shall be no tripping of the system due to out of tolerance conditions caused by the input speed changes. This requirement applies with loads of up to 45 KVA connected on the load side of the generator feeder contactor. During normal operation, with inlet oil temperature of 26.7°C minimum, the channel shall withstand without damage or subsequent impairment of performance, input speed acceleration and deceleration up to 9,000 RPM per second within the rated input speed range, while carrying loads of up to 60 KVA. To

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comply with the test requirements of paragraph 4.0, the channel maximum acceleration and deceleration shall be 4,375 RPM/sec. This lower test requirement shall not relieve the contractor from designing for the above higher design requirements.

3.4.2.4.2 Shaft shear section. Delete the last sentence.

3.4.2.4.3 Shaft spline. Delete "MS-14169" and replace with "Figure 3 of this specification sheet." Add: If removal of the input shaft requires more than minor disassembly of the generator package, then the shaft spline shall be removable with only minor disassembly of the input shaft.

3.4.2.5 Coupling clamp. Delete and add: A quick attach-detach (QAD) coupling clamp shall be the only support for the generator package. The clamp shall be in accordance with Figure 5 of this specification sheet.

3.4.2.7 Operating position. Delete Figure 6 and substitute Figure 7 herein.

Add new paragraph:

3.5.1.1.5 Limited operation. The channel ac power source shall be capable of delivering continuously from 40 to 45 KVA to all balanced loads and to any unbalanced loads wherein the current difference in any two phases does not exceed 19.6 amperes. Continuous operation from 40 to 45 KVA shall be limited to 10 percent or less of the expected total lifetime operating hours. All electrical performance characteristics shall be as specified for 40 KVA load except voltage unbalance. Voltage unbalance shall not exceed 3 volts with an unbalanced load wherein the current difference in any two phases does not exceed 17.4 amperes. Operating conditions shall be the same as for 40 KVA rating except as follows:

- | | |
|---|----------------------|
| a. Power factor | .85 to .95 lagging |
| b. Input shaft speed | 15,300 to 19,800 RPM |
| c. Coolant | |
| Continuous inlet temperature range | -40°C to 79.4°C |
| Maximum inlet temperature for 5 minutes | N/A |
| d. Maximum heat rejection | 830 BTU/min |
| (45 KVA at .95 lagging power factor) | |

3.5.2.1.4 Faulted bus isolation. Add: All bus transfers shall be controlled by the aircraft bus control circuitry and by the internal channel control circuitry connected as shown on Figure 6 to pins 7 through 14. These internal relay contacts and diodes shall be compatible with a nominal 28 vdc as defined by MIL-STD-704 and shall be rated 5 amperes continuous. The channel shall also provide logic to annunciate a failure of both the channel and the generator line contactor to a remotely located maintenance signal recorder. The channel shall provide an internal ground on pin 22 for a contactor failure and on pin 23 for a channel failure as shown in Figure 6 of

this specification sheet. The ground sensing current shall be 10 ma maximum and the open circuit voltage shall be 30 vdc maximum. A ground shall be detected for impedance less than 200 ohms and an open circuit shall be detected for impedances greater than 85,000 ohms. Memory retention of the failure annunciation logic is not required when the system is reset either by the channel control switch or by the generator speed dropping below the minimum speed for rated DC output power.

3.5.4 Underspeed monitor. Delete and add: When the generator package input shaft speed is below the limits listed below, a monitoring function within the channel shall maintain the generator feeder contactor open and the ac power source deenergized. Manual reset of the channel control switch shall not be required to resume normal operation of the channel when the generator shaft speed returns to within the limits listed below. In the event of a protective function trip, reset of the channel shall normally be by manual reset via the channel control switch. In the event of an underspeed condition after a protective function trip, reset of the channel shall not occur until the generator package input shaft speed is below the minimum speed for rated DC output power. The channel shall operate in two modes, an Auxiliary Power Unit (APU) mode, where the channel is decoupled from the engine and is driven by an APU, and an engine mode, where the channel is coupled to and driven by the engine.

APU mode - When operated in the APU mode, the channel shall operate over the speed range of 12,450 to 15,300 RPM and shall be rated at 26 KVA. The channel shall come on line at a generator package input shaft speed between 12,294 and 12,374 RPM. The channel shall not drop off line until the input shaft speed is reduced below 12,165 RPM.

Engine mode - When operated in the engine mode, the channel shall operate over the speed range of 15,300 to 26,250 RPM and shall be rated at 40 KVA. The channel shall come on line at a generator package input shaft speed between 15,138 and 15,238 RPM. The channel shall not drop off line until the input shaft speed is reduced below 14,300 RPM.

The channel shall not be damaged when operated continuously between the speed that the channel drops off line and minimum rated speed under the loading conditions of 3.5.1. The voltage and frequency shall remain within the limits of 3.5.2.1.1 and 3.5.2.2.1, respectively. For oil temperatures at or above 25°C, the channel shall come on line within one second after reaching the on line speed or if already at or above the on line speed, the channel shall come on line within one second after the channel control switch is placed in the NORMAL position. The operating mode shall be selected by a manually operated set of contacts in the aircraft between pins 26 and 34 of the control connector as shown in Figure 6 of this specification sheet.

4.3.1 Qualification submittal. Add:

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- (d) One channel shall have Type J thermocouples installed internally to measure critical temperatures. As a minimum, thermocouples shall be provided to measure oil in and out temperatures on the channel side of the internal heat exchanger for sealed systems, case temperature of the voltage regulating power semi-conductor, most critical electronic component temperature and a large thermal mass located out of the oil flow to be used to determine temperature stabilization. Thermocouples shall be electrically isolated.

4.5.1 Test sample. Add: the dc power feeders shall be #22 AWG wire rather than the #18 AWG as specified in Figure 5 of the general specification.

4.5.9 Generator package input shaft speed. Delete the last sentence.

4.6 Methods of inspection. Add: All tests shall be conducted with the generator package input shaft speed operating within the higher speed range for rated ac power output specified above (15,300 to 26,250 RPM). Tests required by 4.6.5, 4.6.6, 4.6.7, 4.6.8 and 4.6.9 shall be repeated using the lower shaft speed range specified above (12,450 to 15,300 RPM) except that any test required at maximum shaft speed need not be repeated if it was conducted during the first part of this test at a higher load.

4.6.5.2 Electrical performance at minimum temperature. Add the following:

(d) Repeat 4.6.5.2(a) with the generator package mounted vertically and the drive flange facing up.

4.6.5.3 Electrical performance at maximum temperature. Add the following:

(d) Repeat 4.6.5.3(a) with the generator package mounted vertically and the drive flange facing up.

4.6.10 Environmental effects. Delete subparagraph (g) and replace with the following:

(g) Vibration test (see 3.4.1.1).

(1) A sinusoidal/random vibration test shall be conducted on each channel component in each of three axes in accordance with the procedures listed in the following paragraphs. The general requirement of MIL-E-81910 shall apply.

A performance level sinusoidal vibration test shall be conducted on each channel component from 5 to 50 Hz with double amplitude or vibration acceleration levels in accordance with Figure 8 of this specification sheet for the test durations listed in Table I of the specification sheet. Cycling shall be 5 to 50 to 5 Hz logarithmic from 5 to 50 to 5 Hz in approximately 7.5 minutes. Five minute dwells shall be conducted at up to two resonances most likely to cause damage.

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TABLE I. Performance Sinusoidal Vibration Test Schedule (minutes).

Number of Resonances	Total Dwell at Resonance	Total Cycling Time	Total Test Time
0	0	30	30
1	5	30	35
2	10	30	40

An endurance level sinusoidal vibration test shall be conducted on each channel component from 5 to 50 Hz with double amplitude or vibration acceleration levels in accordance with Figure 8 of this specification sheet for the test durations listed in Table II of this specification sheet. Cycling shall be logarithmic from 5 to 50 to 5 Hz in approximately 7.5 minutes. Thirty minute dwells shall be conducted at up to two resonances most likely to cause damage.

TABLE II. Endurance Sinusoidal Vibration Test Schedule (minutes).

Number of Resonances	Total Dwell at Resonance	Total Cycling Time	Total Test Time
0	0	90	90
1	30	60	90
2	60	30	90

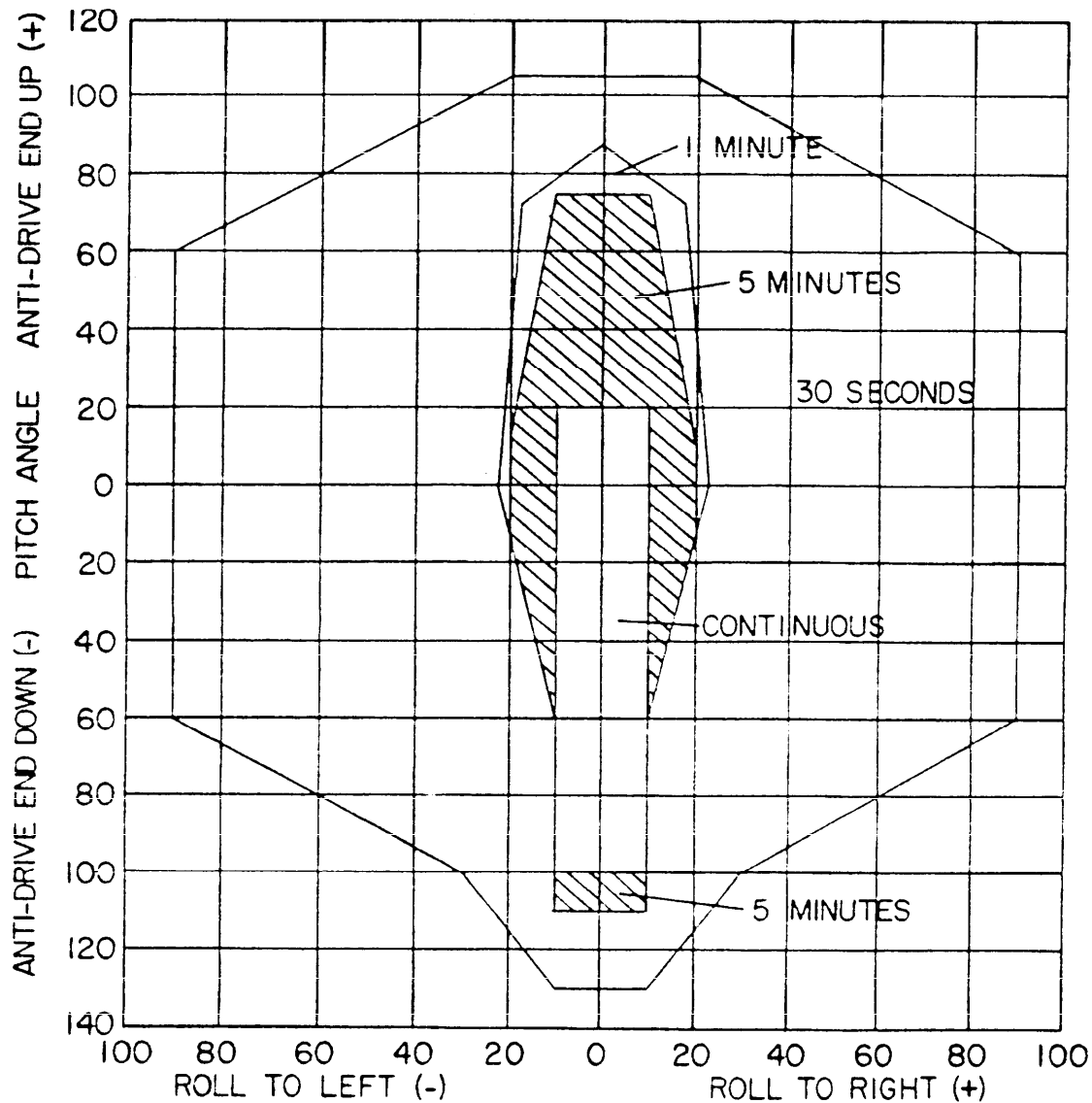
The gunfire level sinusoidal vibration test shall be conducted on the current transformer assembly only from 50 to 500 Hz with double amplitude or vibration acceleration levels in accordance with Figure 8 of this specification sheet for the test durations, dwell times and dwell frequencies of Table V of this specification sheet. Cycling shall be logarithmic from 50 to 500 Hz in approximately 7.5 minutes.

The performance random vibration test shall be conducted on all channel components from 50 to 2000 Hz. The applicable random vibration spectrum range and test levels are shown in Figure 9 of this specification sheet. The test duration shall be 30 minutes.

The endurance random vibration test shall be conducted on all channel components from 50 to 2000 Hz. The applicable random vibration spectrum range and test levels are shown in Figure 9 of this specification sheet. The test duration shall be 120 minutes.

The gunfire random vibration test shall be conducted on the current transformer assembly only from 500 to 2000 Hz. The applicable random vibration spectrum range and test levels are shown in Figure 9 of this specification sheet. The test duration shall be 30 minutes.

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Notes:

1. All pitch angles are with respect to the rotational axis of the generator. Roll angles are to be measured from the zero degree roll angle as defined in the detail specification.
2. This figure assumes only a gravitational force on the unit under test.
3. The total requirement includes 30 seconds in a zero gravity, negative 1g condition, or inverted.

FIGURE 7. Generator Package Attitude (3.4.2.7).

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(2) Using a logarithmic sweep of 30 minutes duration, a sinusoidal vibration test shall be conducted on each channel component in each of three axis from 10 to 500 to 10 Hz with a .5g input over the range of 10 to 50 Hz and a 2g input over the range of 50 to 500 Hz. If resonances likely to cause damage occur within the frequency ranges of 16 to 20 Hz, 32 to 40 Hz, 90 to 130 Hz, or 250 to 350 Hz, a 30 minute resonant dwell in the axis in which the resonance was observed shall be conducted at the peak g levels per table 514.3 - IV of MIL-STD-810 for equipment mounted on or near drive system elements. Narrow band sweeps shall also be conducted in each axis at the indicated input g levels for frequency bands listed in Table III of this specification sheet. Sweep rates shall be approximately the same as those established above for these frequency bands. The duration of each narrow band sweep shall be 30 minutes.

TABLE III. Narrow Band Sinusoidal Vibration Sweeps.

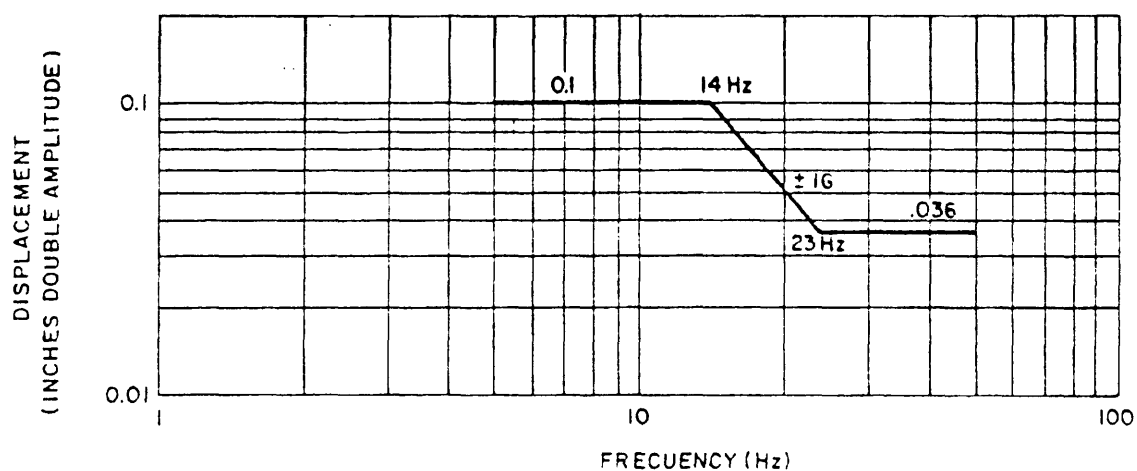
Input g Level	Frequency Range
2	16 - 20 Hz
4	32 - 40 Hz
6.5	90 - 130 Hz
8.5	250 - 350 Hz

4.6.12.1 Generator package position. Add: A fixed angle gearbox may be used to perform the position test. If a fixed angle gearbox is used, the test times of Table IV of this specification sheet shall commence when the generator package has attained the appropriate speed and load.

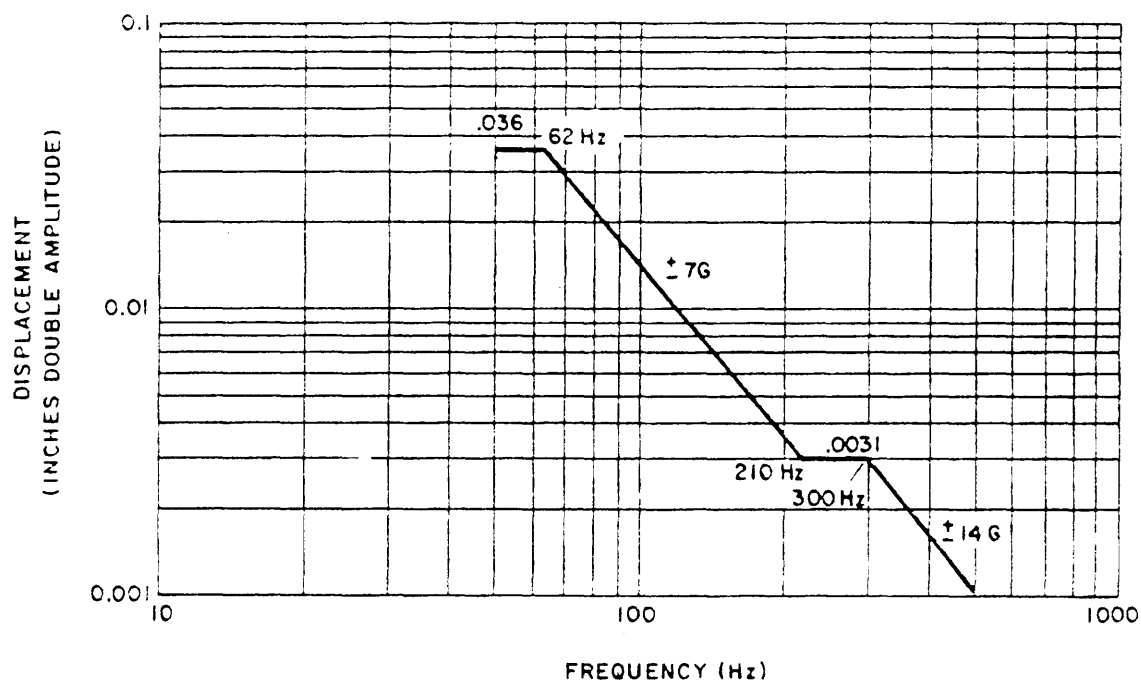
4.6.14 Endurance. Add: Every fifth cycle of Table III of MIL-E-85583 shall be conducted at the lower generator input shaft speed range (12,450 to 13,500 RPM) specified above. The generator package input shaft speed for each step during every fifth cycle shall be 12,450 RPM for the first hour and 13,500 RPM for the remaining hour with the exception of step 5. All of step 5 shall be conducted at a generator package input shaft speed of 13,500 RPM.

Add: (e) While running under load, oil to the generator package shall be shut off for 30 seconds 5 times at minimum intervals of 5 hours.

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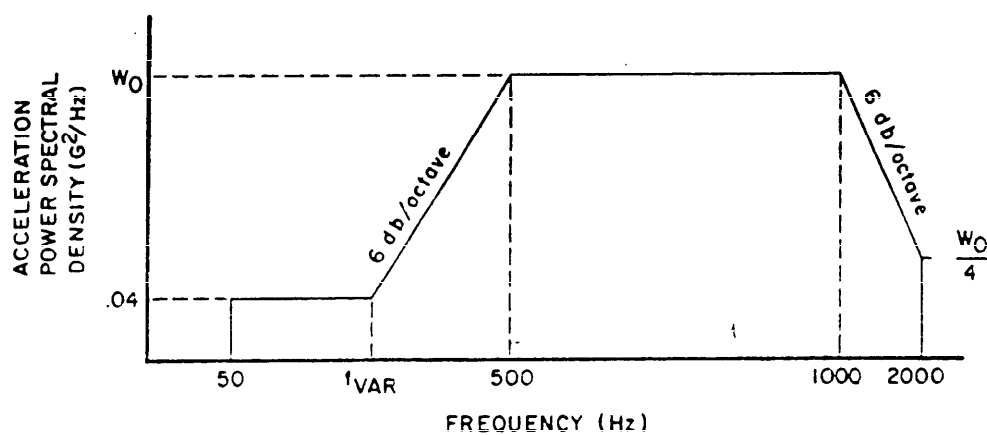
Performance and Endurance Sinusoidal Vibration Requirements (5-50 Hz)



Gunfire Sinusoidal Vibration Requirement (50-500 Hz)

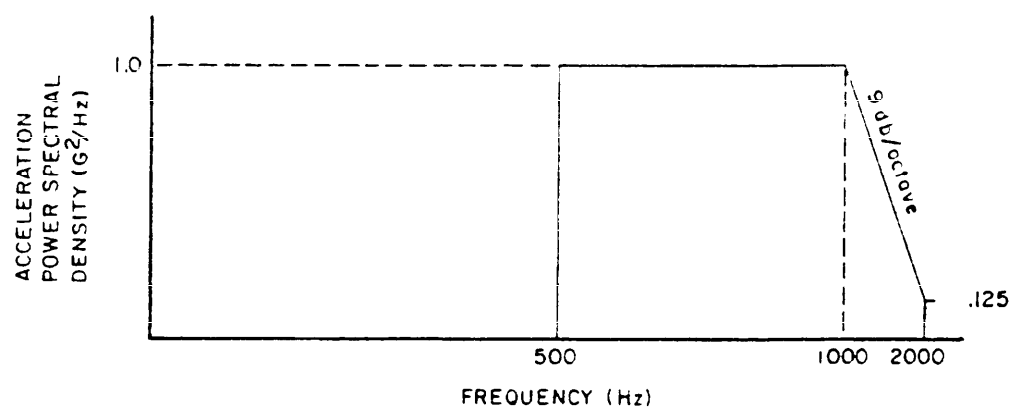
FIGURE 8. Sinusoidal Vibration Test Requirements.

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	W_0	
	Performance	Endurance
Generator Package	.10	.30
Coupling Clamp	.10	.30
Current Transformer	.12	.36

Performance and Endurance Random Vibration Requirements



Gunfire Random Vibration Requirements for CTA

FIGURE 9. Random Vibration Test Requirements.

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TABLE IV. Generator Package Attitude/Time Test (4.6.12).

Pitch ($\pm 1^\circ$)	Roll ($\pm 1^\circ$)	Minimum Time
+20	+10	2 hours
+20	-10	2 hours
-100	+10	2 hours
-100	-10	2 hours
0	+20	5 minutes
0	-20	5 minutes
+75	+10	5 minutes
+75	-10	5 minutes
-60	+10	5 minutes
-60	-10	5 minutes
-110	+10	5 minutes
-110	-10	5 minutes
+87.5	0	1 minute
+72.5	+17.5	1 minute
+72.5	-17.5	1 minute
-130	+10	30 seconds
-130	-10	30 seconds
-60	+90	30 seconds
-60	-90	30 seconds
+60	+90	30 seconds
+60	-90	30 seconds
+105	0	30 seconds
0	Inverted	30 seconds

TABLE V. Gunfire Level Sinusoidal Vibration Test Schedule.
(Test times in minutes per axis).

Number or Resonances	0	1	2	3
Sweep Time	22.50	15.00	7.50	00.00
Resonance Dwell Time	--	7.50	15.00	22.50
Fixed Dwells (see Note 1 below) at the following center frequencies:				
$f_d = 67$ Hz	7.50	7.50	7.50	7.50
100 Hz	7.50	7.50	7.50	7.50
135 Hz	7.50	7.50	7.50	7.50
167 Hz	7.50	7.50	7.50	7.50
200 Hz	15.00	15.00	15.00	15.00
267 Hz	7.50	7.50	7.50	7.50
300 Hz	7.50	7.50	7.50	7.50
335 Hz	7.50	7.50	7.50	7.50
400 Hz	15.00	15.00	15.00	15.00
467 Hz	7.50	7.50	7.50	7.50
500 Hz	7.50	7.50	7.50	7.50
Total Time Each Axis	120.00	120.00	120.00	120.00

Notes:

1. The fixed narrow band dwells shall be performed by sweeping the above +5% of the specified center frequency. For example, the dwell should be performed from 95 to 105 Hz. The sweep rate shall be approximately the same as that used for the sweep testing in the frequency range.
2. Resonance dwells shall be performed at points in the range of 95 to 105 Hz. Resonances may be obtained with a low level (.024 inch displacement amplitude or $\pm 2g$'s whichever is less) sweep.
3. When an equipment resonance occurs within ± 5 percent of a fixed frequency, the fixed dwell period shall be omitted and only the dwell performed. The omitted fixed dwell time shall then be a sweep time.

The following changes apply to figures and tables of the general specifications:

Table II. Delete: Table II and replace with Table IV of this specification sheet.

Figure 5. Figure 5 is applicable except the return circuit for feeders shall be as shown in Figure 6 (pin 25) of this specification sheet.

Figure 6. Delete: Figure 6 and replace with Figure 7 of this specification sheet.

Notes:

1. The following notes apply to all figures.
 - a. Dimensions are in inches. Tolerance is $\pm .005$ unless otherwise specified.
2. The following notes apply to Figure 1.
 - a. The terminal block to which the main ac feeders are attached have size 5/16-24 NF threaded studs on 1.5 inch centers.
 - b. The connector shall be used to make all electrical connections other than the main feeders, to the aircraft wiring harness assignments are shown in Figure 6.
 - c. The oil level in the generator packages having a sealed lubricant oil system shall be monitored by a sight glass within the area identified on Figure 1.
 - d. A RFI bonding wire will be attached between the generator and the airframe. The wire is not part of the channel. The bonding pad shall not be painted.

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3. The following note applies to Figure 2.
 - a. Provisions for mounting or stowing aircraft drain tubes shall be provided. The bottom surface shall be flat within .375 inches of the tube or threaded hole (along with the area in between) to provide an attachment area for the drain tube. The flat surface to which the aircraft drain tubes attach shall be 7.3 inches maximum below the drift shaft centerline to insure sufficient clearance between the drain tubes and surfaces below the generator package. Drain tube installation provisions shall be approved by the procuring activity.
4. The following notes apply to Figure 3.
 - a. The mounting flange shall be in accordance with MS3333-2 grooved pilot (type G), except as modified by Figure 3.
 - b. .02 inch minimum clearance shall be allowed for oil flow on diameters and length of drive sleeve and mating parts.
 - c. The four oil transfer tubes shall be retained in the generator package.
 - d. The spline will be lubricated with MIL-L-23699, MIL-L-7808, or MIL-L-85734 oil. The oil will be injected into the center of the shaft from the driving gearbox. Oil will flow out the drain holes (one of two shown in Figure 3 and back over the spline surfaces providing lubrication. An O-ring on the shaft will prevent oil from flowing into the interface cavity. Spline lubricating oil will be drained back into the gearbox.
 - e. The interface cavity between the generator package and the gearbox is a wet cavity. Oil from the gearbox lubrication tube is routed through a passage in the gearbox and dumped into the cavity at a height of 1.02" above the transfer tube. The generator side of the interface cavity shall be suitably protected from oil in the cavity entering the generator package under all operating attitudes of 3.4.2.7.
5. The following notes apply to Figure 6.
 - a. The generator package receptacle (MS27656T15B35S or equivalent) shall mate with aircraft connector MS27467T15B35P. Pins 1 through 6, 31, 33 and 37 are not used and shall have no connection internal to the generator package. The jumper between pin 17 and 18 shall be used to detect whether the connector is installed. The channel shall not operate if the connector is not installed. Pins 30 and 36 shall be used to sense the status of the line contactor.
 - b. The current transformer assembly receptacle (MS27656T9B35S or equivalent) shall mate with aircraft connector MS27467T9B35P.

- c. The generator package is required to deliver DC power line contactor on pins 24 and 25. The DC output can I the maximum current provided the total load on the ch source does not exceed the maximum current rating.
- d. The DC point of regulation will be at the terminals o package. Interconnection shall be as shown in Figure contactors are expected to draw approximately .25 amp
- e. The internal circuitry connected to pins 7 through 14 in conjunction with external aircraft circuitry to pr control of the primary AC distribution system in acco 3.5.2.1.4. The two normally closed generator control shall be used to determine whether a channel has been (relay energized) or off (relay deenergized). The no Bus Inhibit Relay (BIR) shall be used to inhibit (rel or permit (relay deenergized) a bus transfer to occur

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(Project No. 6115-1

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-E-85583/2(AS)		2. DOCUMENT TITLE ELECTRIC POWER GENERATING CHANNEL, VARIABLE INPUT SPEED, 12,450 to 26,250 RPM, ALTERNATING CURRENT,	
3a. NAME OF SUBMITTING ORGANIZATION Hz, 40 KVA		4. TYPE OF ORGANIZATION (Mark one) <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____	
b. ADDRESS (Street, City, State, ZIP Code)			
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
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