



FIFTY-HERTZ POWER SYSTEM - DESCRIPTION/OPERATION

1. General

An inverter, Residual Current Disrupter (RCD) protection devices, and outlets are installed to provide 220VAC/50Hz power to selected cabin accessories.

2. Component Location

Refer to Figure 1, Figure 2, and Figure 3.

Ident	Description	Location/Zone	ATA
A3009A	Appliances RCD	Upper Galley/XXX	XXXX-XX-XX
A3009B	Outlets RCD	Upper Galley/XXX	SMM XX-XX-XX
A3010	Lavatory RCD	Lavatory Vanity/XXX	SMM XX-XX-XX
INVF1	5-Amp Fuse	FSXXX/XXX	SMM XX-XX-XX
INVF2	20-Amp Fuse	FSXXX/XXX	SMM XX-XX-XX
INVK1	Contactora	FSXXX/XXX	SMM XX-XX-XX
J3002	Outlet, 220VAC/50Hz	Cabin Galley/XXX	SMM XX-XX-XX
J3003	Outlet, 220VAC/50Hz	Armrest at FSXXX/XXX	SMM XX-XX-XX
J3004	Outlet, 220VAC/50Hz	Armrest at FSXXX/XXX	SMM XX-XX-XX
J3007	Outlet, 220VAC/50Hz	Lavatory Vanity/XXX	SMM XX-XX-XX
J3022	Outlet, 220VAC/50Hz	Armrest at FSXXX/XXX	SMM XX-XX-XX
J4304	Outlet, 220VAC/50Hz	Armrest at FSXXX/XXX	SMM XX-XX-XX
PS5	Inverter	FSXXX/XXX	SMM XX-XX-XX

3. System Description

The 50Hz Power System uses an inverter to convert 28VDC to 220VAC/50Hz with a capacity of 2.0 Kilo Volt-Amperes (kVA). The inverter is remotely controlled from the AC PWR switch on the cockpit Cabin Power Control Panel. The power is made available to outlets for conventionally-powered equipment such as personal electronics and cell-phone chargers.

The system includes a device to protect against electric shock. Multiple outlets can be connected to and protected by one RCD. The galley RCD in the galley provides ground fault protection to the galley and cabin outlets. The lavatory RCD in the lavatory vanity cabinet provides ground fault protection to the lavatory outlet.

A. Power Source

The inverter is powered by the 28VDC L AUX bus through the production-installed fuse on the Left DC Power Center (LDCPC), labeled F19-LAUXF. The output of the inverter is provided to the Auxiliary Galley Circuit Breaker Panel (AUX GCBP) 220VAC/50Hz bus through 15-Amp fuse INVF2. The RCDs are powered through the MAIN circuit breaker on the AUX GCBP. The outlets are powered through the CABIN and LAV circuit breakers on the AUX GCBP. The contactor is protected by 5-Amp fuse INVF1.

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4. Component Description

A. Inverter

The inverter converts 28VDC to 220VAC/50Hz and sources a maximum current of 2 KVA. It has remote on/off capability.

B. Residual Current Disrupter

An RCD opens a circuit if it senses current leakage of approximately 30 milliamperes or greater through paths other than the circuit wiring. Response time is approximately 100 milliseconds, which is designed to prevent electrical shock to persons. The RCD has a TEST button and an ON/OFF lever to allow testing of the protection circuitry.

C. Outlets

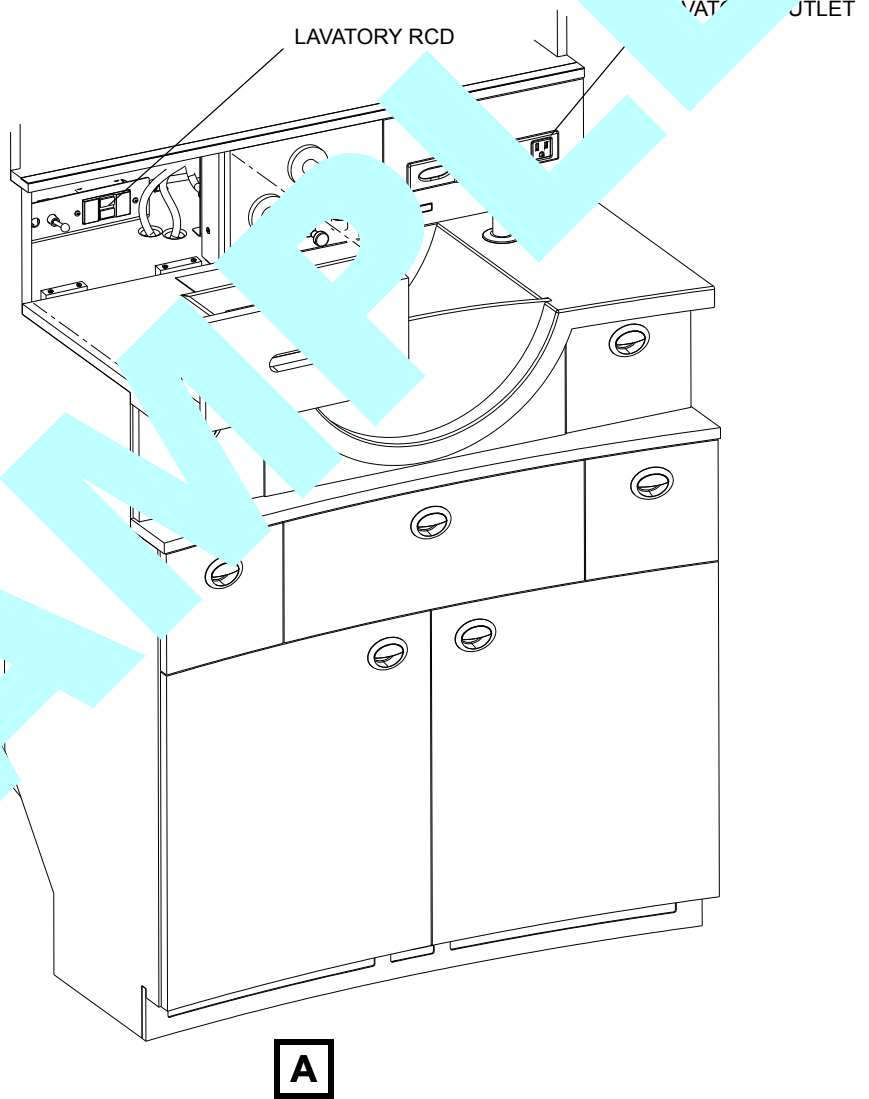
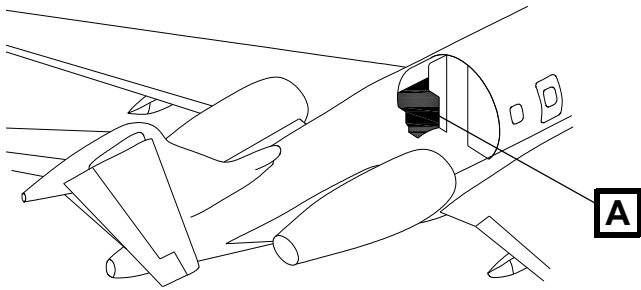
The outlets are single-receptacle, Universal style.

D. Contacter

The contactor is a 28VDC operated contactor rated for 10 Amperes operating current.

5. Operation

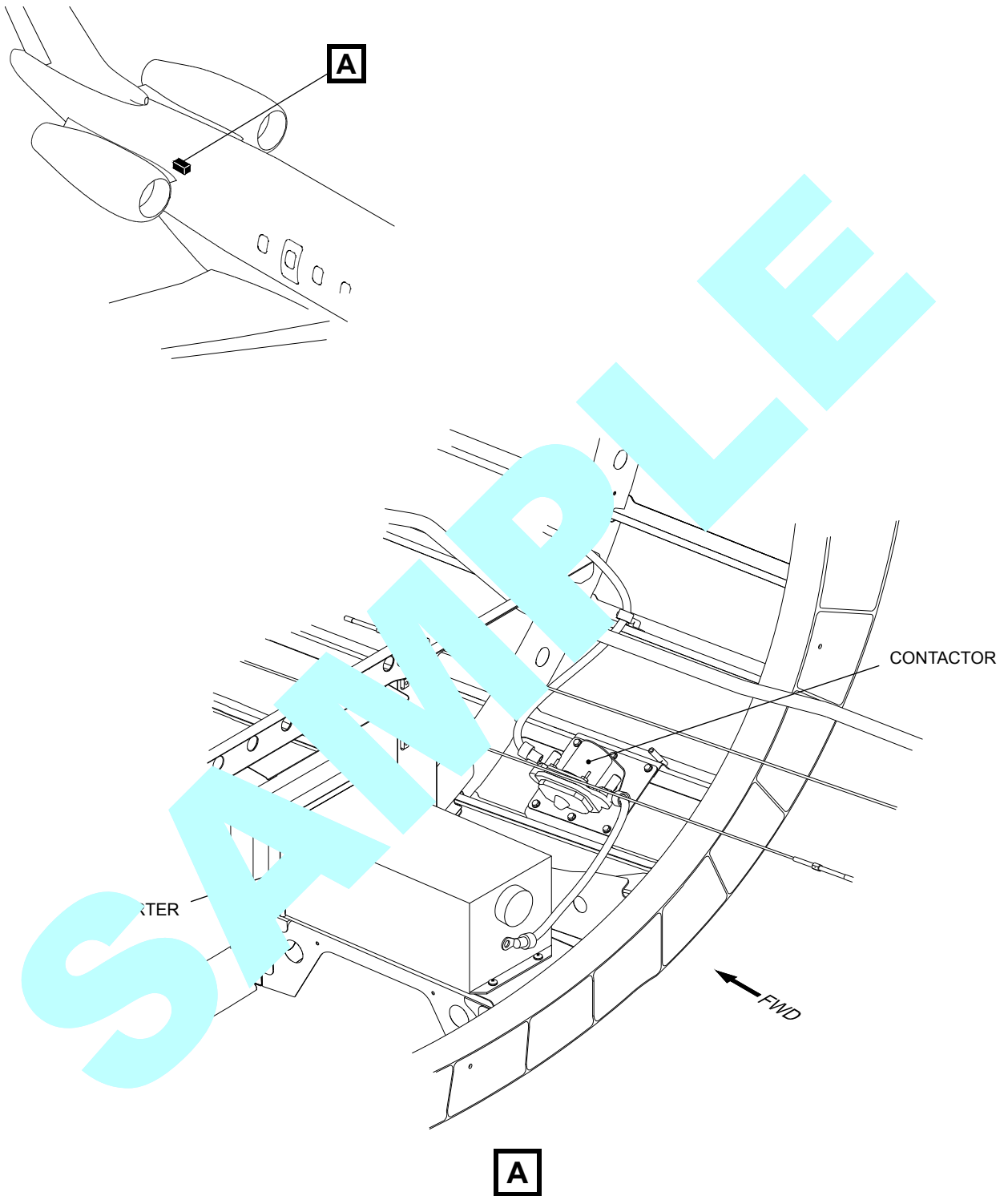
Power must be supplied to the inverter from the AUX bus for the inverter to operate. Press the AC PWR Push-Button Annunciator (PBA) on the Cabin Control Panel to energize contactor INVK1, and provide a remote-on signal to the inverter. Contactor INVK1 applies 28VDC operating voltage to the inverter. The inverter provides 220VAC/50Hz power to the cabin and lavatory outlets. Relay KPWR3002 in the galley will disconnect the inverter from the AUX GCBP if the oxygen system is deployed.



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Fifty-Hertz Power System
Figure 2

EFFECTIVITY: XXXXX-SMM
Revision FI



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Fifty-Hertz Power System
Figure 3

EFFECTIVITY: XXXXX-SMM
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