

12-VOLT DIRECT CURRENT POWER OUTLET SYSTEM - DESCRIPTION AND OPERATION**1. General**

- A. This section gives information about the components of the 12-Volt Direct Current (VDC) power outlet system. These components include a 10-amp circuit breaker, 3-position switch, an Astron N2412-12 DC-DC converter, and optional second converter and a 12VDC power outlet with an optional two more power outlets in the cabin.
- B. The actual voltage output of the system is 13.8VDC. The DC-DC converter changes the airplane 28VDC to 13.8VDC. The system voltage will be referred to as 12VDC in this manual.

2. Description

CAUTION: Not all devices with a cigarette lighter style plug are approved for use aboard an airplane. The airplane operator is responsible to know which Personal Electronic Devices (PED) will not interfere with the safe operation of the airplane in which the PED is operated. Refer to AC 91.21-A, Use of Portable Electronic Devices Aboard Aircraft for guidance material about FAA approved devices.

- A. The function of the 12VDC Power Outlet System is to provide power for Portable Electronic Devices (PED) that are compatible with the automotive-style 12VDC power outlets at an equivalent voltage.
- B. There are two subsystems that make up the 12VDC system. These systems are divided into the power outlet for the crew, and the optional second converter and power outlets for the passengers.
 - (1) The crew power outlet is found in the pedestal between the pilot and copilot.
 - (2) The two passenger-use power outlets are found on the two sidewalls, approximately halfway to the rear of the airplane. The power outlet on the 208 will be found at FS 206.15, and the power outlet on the 208B will be found at FS 226.12.
- C. The DC-DC converters are found in the floor compartment under the access panel (232AC). Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation. A single DC-DC converter can supply 138 Watts continuously, or 165 Watts at maximum output. There is one converter that supplies power to the crew power outlet in the pedestal and an optional second converter that supplies power to the passenger-use power outlets found approximately halfway to the rear of the airplane. The two passenger-use outlets are found along the sidewalls of the cabin, and are connected to the DC-DC converter in parallel. The passenger-use power outlets must share the 138 Watts continuous output.

3. Operation

- A. The 12VDC Power Outlet System components include a 10-amp circuit breaker, 3-position switch, the Astron N2412-12 DC-DC converter(s) and the 12VDC power outlet(s).
 - (1) The 10-amp circuit breaker is found in the pilot's circuit breaker panel and is placarded as AUX 12VDC PWR. The 10-amp circuit breaker directly supplies power to the 3-position switch. The 10-amp circuit breaker lets the total output power of the 12VDC power outlet system get to only a maximum of 250 Watts, which will create a limit on the DC-DC converters of approximately 88% efficiency.

NOTE: The circuit breaker is sized to trip just before the maximum continuous load of 276 Watts. The maximum wattage is calculated as 138 Watts x 2, for both converters operating at the same time.

- (2) The DC-DC converters supply power to the power outlets that are installed in the airplane. The 28VDC airplane voltage is converted by the DC-DC converters to 13.8VDC at the power outlets.
- (3) The 3-position switch (SZ10) controls power output to the individual power outlets installed in the airplane. Put the 3-position switch in the OFF position in order to disengage power to the 12VDC system. Put the 3-position switch in the CREW position to supply 28-Volt power to the DC-DC converter which supplies 13.8VDC to the crew power outlet only. The crew power outlet is found in the pedestal which is accessible to the pilot and copilot. Put the 3-position switch in the ALL position to supply power to both the standard DC-DC converter and the optional DC-DC converter, which supplies power to the power outlets in the cabin for passenger-use.

NOTE: If the optional passenger-use power outlets are not installed, the crew power outlet in the pedestal will still supply power for the pilot and copilot when the 3-position switch is in the ALL position.