



CASTLEBERRY
Instruments & Avionics

**EMERGENCY POWER UNIT
EPU28-24XXX
PILOT'S OPERATING
MANUAL**

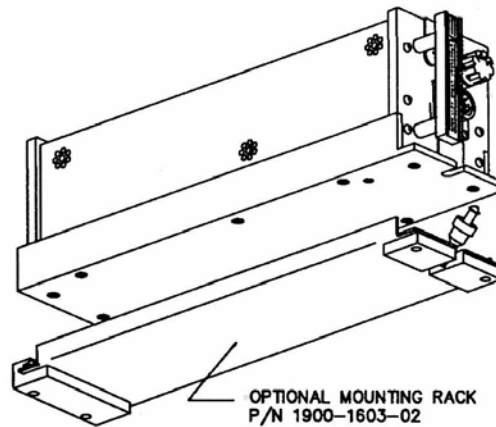


CONTENTS

FIGURE 1	PAGE 3
GENERAL INFORMATION	PAGE 3
PANEL CONTROLS	PAGE 4
PRE-FLIGHT GROUND CHECK	PAGE 4
ENGAGING THE EPU	PAGE 5
EMERGENCY PROCEDURES	PAGE 5
SHUTDOWN	PAGE 5
CONTINUED AIRWORTHINESS	PAGE 5
WARRANTY	PAGE 6



Figure 1



EMERGENCY POWER UNIT

The typical installation will provide an ARM Light and an ARM ON / OFF Switch located on the cockpit instrument panel. The style of lamp and switch may vary with the discretion of the installer.

GENERAL INFORMATION

The EPU 28-24 XXX, hereafter referred to as EPU, consists of a Battery Pack and Charger, Arming Switch and Indicator Lamp. The EPU is powered by a single 5 Amp. circuit breaker located on the circuit breaker panel connected to the Aircraft DC Main Avionics Bus. The EPU will be maintained at full charge as long as main avionics power is available. When the EPU is ARMED, upon loss of main avionics power, it will automatically switch to the battery back-up to supply power to all the units connected to the output of the EPU. With fully charged batteries, the total load capacity of the EPU is 2.5AH for a 28 volt system or 5 AH for a 14 volt system. The run time of the units supplied by battery power is therefore determined by the load current of the units connected to the EPU. Upon restoration of main avionics power, the EPU will automatically switch the units back to the Main Avionics Buss and place the EPU back in the charge mode.



PANEL CONTROLS

The ARM Switch and Indicator Lamp, installed on the aircraft instrument panel, gives the pilot the capability of disconnecting all equipment from the EPU. This will prevent accidental discharge of the batteries while the aircraft electrical system is shut down under normal non-emergency conditions.

When the ARM switch is engaged, the EPU Indicator Lamp serves as an indication of the EPU's operation status. Under normal aircraft electrical system operation, the indication lamp will glow at half brightness signifying EPU is in the battery-charging mode and the EPU fuse is intact. Under aircraft electrical system failure, the lamp will glow at full brightness. This indicates that the EPU is in its emergency battery-backup power mode. If the EPU's fuse is defective, the indicator lamp will not illuminate under either condition.

PRE-FLIGHT GROUND CHECK

The EPU should be checked during preflight as follows:

1. Press-to-test the EPU Indicator Lamp and lamp should be on full brightness.
2. With the Avionics Master switch OFF, turn on the EPU ARM switch. The EPU indicator lamp should be on at full brightness and the equipment that is supplied by the EPU should have battery power applied.
3. Turn on Avionics Master Switch and the EPU indicator lamp should be on at half brightness and the equipment should now be supplied power by the Aircraft Avionics Power.
4. Turn off the EPU ARM switch and the EPU indicator should go out and the equipment should continue to be powered by the Aircraft Avionics Power.
5. Turn on the EPU ARM switch and the EPU indicator should be on half brightness.



ENGAGING THE EPU

The EPU is designed for full time use from aircraft startup to shutdown. When the EPU Circuit Breaker is closed and the EPU ARM and the Avionics Master Switches are on, the unit is in charge mode ready to automatically switch to battery back-up for all the units connected to it any time the aircraft power fails.

EMERGENCY PROCEDURES

In the event of a malfunction, the EPU can be disconnected by pulling the EPU Circuit Breaker and turning off the EPU ARM switch. To restore the EPU power after Circuit Breaker operation, be sure the EPU ARM switch is OFF and reset EPU Circuit Breaker. Turn EPU ARM switch to ON.

SHUTDOWN

During normal shutdown procedures, **when the aircraft Avionics Master Switch is turned OFF, the EPU ARM switch shall be turned OFF at the same time** to prevent discharging of EPU batteries, resulting in irreversible damage to battery cells.

CONTINUED AIRWORTHINESS

Prior to use after installation of the EPU and every six months thereafter, a battery capacity test should be run to determine battery condition.

This test is performed by powering the equipment that the EPU is intended to operate from the EPU batteries to determine if the batteries will support the load for the required time of 2.5AH. An EPU not meeting the rated capacity should be recharged and re-tested. A second battery capacity test failure shall require replacement of the battery pack.



CASTLEBERRY
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CASTLEBERRY Instruments & Avionics, L.L.C.
Austin, Texas

LIMITED WARRANTY CERTIFICATE

CASTLEBERRY Instruments & Avionics (herein called **CIA**) warrants each item of new equipment manufactured or sold by it to be free from defects in material and workmanship under normal use for which intended for a period of **15** months from date of shipment by **CIA**. No claim for breach of warranty will be allowed unless **CIA** is notified thereof in writing within thirty (30) days after the material or workmanship defect is found.

The obligation of **CIA** shall be limited to replacing or repairing at it's factory, the equipment found defective under the terms of this warranty certificate: providing that such equipment is returned in an approved shipping container, transportation charges prepaid, to:

CASTLEBERRY Instruments & Avionics, L.L.C.

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Austin, TX 78753

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or such other location as **CIA** may authorize. **CIA** reserves the right to have necessary repairs performed by an authorized agency.

This warranty shall not apply to any unit or part thereof which has not been installed or maintained in accordance with **CIA** instructions, or has been repaired or altered in any way so as to adversely affect its performance or reliability, or which has been subjected to misuse, negligence or accident.

This warranty is exclusive and is accepted by buyer in lieu of all other guaranties or warranties of merchantability and fitness for a particular purpose. Buyer agrees that in no event will **CIA** liability for all losses from any cause, whether based in contract, negligence, strict liability, other tort or otherwise, exceed buyer's net purchase price,, nor will **CIA** be liable for any special, incidental, consequential or exemplary damages.

CIA reserves the right to make changes in design or additions to or improvements in its equipment without the obligation to install such additions or improvements in equipment theretofore manufactured.