

**TITLE**

INDICATING/RECORDING SYSTEMS - COLLINS ENVIRONMENTAL CONTROLLER (IEC) AND POWER SUPPLY (PWR) IAPS MODULES INSPECTION/REPLACEMENT

**EFFECTIVITY**

<b>MODEL</b>	<b>SERIAL NUMBERS</b>
Super King Air B200GT	BY-426, BY-428 thru BY-433
Super King Air B200CGT	BZ-6, BZ-7
Super King Air B300	FL-1290, FL-1291, FL-1293 thru FL-1297
Super King Air B300C	FM-106, FM-107

**REASON**

Collins Aerospace has discovered a batch of transistors used in their IAPS Environmental Controller (IEC) module and Power Supply (PWR) modules that may have lower than expected reliability.

**DESCRIPTION**

This service document provides instructions to inspect the IAPS Environmental Controller (IEC) module and Power Supply (PWR) modules and send them to Textron Aviation for upgrade, if necessary.

**COMPLIANCE**

RECOMMENDED. This service document should be accomplished prior to July 31, 2023.

A service document published by Textron Aviation may be recorded as *completed* in an aircraft log only when the following requirements are satisfied:

- 1) The mechanic must complete all of the instructions in the service document, including the intent therein.
- 2) The mechanic must correctly use and install all applicable parts supplied with the service document kit. Only with written authorization from Textron Aviation can substitute parts or rebuilt parts be used to replace new parts.
- 3) The mechanic or airplane owner must use the technical data in the service document only as approved and published.
- 4) The mechanic or airplane owner must apply the information in the service document only to aircraft serial numbers identified in the *Effectivity* section of the document.
- 5) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Textron Aviation is authorized to make or apply any changes to a Textron Aviation-issued service document or flight manual supplement without prior written consent from Textron Aviation.

Textron Aviation is not responsible for the quality of maintenance performed to comply with this document, unless the maintenance is accomplished at a Textron Aviation-owned Service Center.

October 11, 2022

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Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

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**REFERENCES**

Super King Air B200GT/B200CGT Fusion Maintenance Manual

Super King Air B300/B300C Fusion Maintenance Manual

Collins Aerospace Service Bulletin IEC-X00X-31-A, Indicating And Recording System - IEC-X00X - Replacement Of Low Reliability Transistors

Collins Aerospace Service Bulletin PWR-X00X-31-B Indicating And Recording System - PWR-X00X - Replacement Of Low Reliability Transistors

**PUBLICATIONS AFFECTED**

None

**ACCOMPLISHMENT INSTRUCTIONS**

1. Prepare the airplane for maintenance.
  - A. Make sure that the airplane is electrically grounded.
  - B. Make sure that all switches are in the OFF/NORM position.
  - C. Disconnect electrical power from the airplane.
2. Do an inspection of the IEC module.
  - A. Remove the left avionics compartment door and gain access to the integrated card cage (ICC).
  - B. Loosen the four screws and remove the ICC cover from the ICC.
  - C. Inspect the IEC module handle for the serial number.
    - (1) If the serial number of the IEC module is listed in the attached Collins Aerospace Service Bulletin IEC-X00X-31-A and is not marked A or higher, do the steps that follow:
      - (a) Remove the current IEC Module. (Refer to the applicable Maintenance Manual, Chapter 31, IAPS Environmental Controller (IEC-3001) - Removal/Installation.)
      - (b) Send the IEC module to Textron Aviation for incorporation of MOD A.
      - (c) Install the MOD A IEC module. (Refer to the applicable Maintenance Manual, Chapter 31, IAPS Environmental Controller (IEC-3001) - Removal/Installation.)
      - (d) Go to Step 3.
    - (2) If the serial number of the IEC module is not listed in the attached Collins Aerospace Service Bulletin IEC-X00X-31-A, go to Step 3.
3. Do an inspection of the PWR 3000 and/or PWR 4000 PWR modules.
  - A. Inspect the left and right PWR 3000 and/or PWR 4000 module handles for the serial number.
    - (1) If the serial number of the PWR 3000 and/or PWR 4000 PWR module is listed in the attached Collins Aerospace Service Bulletin PWR-X00X-31-B and is not marked B or higher, do the steps that follow:
      - (a) Remove the affected PWR 3000 or PWR 4000 Module(s). (Refer to the applicable Maintenance Manual, Chapter 31, Power Supply Module (PWR-3000) - Removal/Installation.)
      - (b) Send the PWR 3000 module(s) to Textron Aviation for incorporation of MOD B.
      - (c) Install the MOD B PWR 3000 module(s). (Refer to the applicable Maintenance Manual, Chapter 31, Power Supply Module (PWR-3000) - Removal/Installation.)
      - (d) Go to Step 4.

- (2) If the serial number of the PWR 3000 module(s) are not listed in the attached Collins Aerospace Service Bulletin PWR-X00X-31-B, go to Step 4.
4. Remove the maintenance warning tags and connect the airplane battery.
  5. Do an operational check of the IEC module. (Refer to the applicable Maintenance Manual, Chapter 31, IAPS Environmental Controller (IEC-3001) - Adjustment/Test.)
  6. Do an operational check of the power supply modules. (Refer to the applicable Maintenance Manual, Chapter 31, Power Supply Module (PWR-3000) - Adjustment/Test.)
  7. Position the ICC cover on the ICC card cage and secure with the four screws.
  8. Install the left avionics compartment door.
  9. Make an entry in the airplane logbook that states compliance and method of compliance with this service document.

**NOTE:** Textron Aviation recommends that compliance with all service documents is reported to a maintenance tracking system provider.

- Complete a record of compliance. (Maintenance Transaction Report, Log Book Entry, or other record of compliance.)
- Put a copy of the completed record of compliance in the airplane logbook.
- Send a copy of the completed record of compliance to the maintenance tracking system provider used.

#### MATERIAL INFORMATION

It may be necessary to order one or more of the parts below to install this modification.

NEW P/N	QUAN-TITY	KEY WORD	OLD P/N	INSTRUCTIONS/ DISPOSITION
822-1167-001	As required	IEC Module	Same	Return to Textron Aviation for repair.
822-1137-001	As required	PWR-3000 Module	Same	Return to Textron Aviation for repair.
622-9945-021	As required	PWR-4000 Module	Same	Return to Textron Aviation for repair.
622-9945-022	As required	PWR-4000 Module	Same	Return to Textron Aviation for repair.

Contact the Textron Aviation Parts Distribution Repair Team to schedule your unit at [citationrepair@txtav.com](mailto:citationrepair@txtav.com) available 8:00 - 4:30 CST weekdays. Advance notification and coordination is required for Textron Aviation Parts Distribution Repair Team to effectively schedule units, ship to supplier and arrange return. A Customer Repair Request Form is available online at [ww2.txtav.com/Parts](http://ww2.txtav.com/Parts) that is required to ship with every repair. The expected turn time for the supplier supporting this service document is 10 to 14 days.

\* Please contact your Regional Textron Aviation Parts Distribution Customer Support Team for current cost and availability of parts listed in this service document. Phone at 1-800-835-4000 (Domestic) or 1-316-517-5603 (International).

For more information, please visit the TAPD Support & Aftermarket Account Management website at <https://ww2.txtav.com/Parts/Promos/TAPD>.

Based on availability and lead times, parts may require advanced scheduling.

In cases where the required part(s) are approved as exchange, order the exchange part and, upon completion, expedite the return of the removed part to avoid return penalties. Contact the Textron Aviation Parts Distribution Sales Desk for availability of exchange parts.



**TITLE**

INDICATING/RECORDING SYSTEMS - COLLINS ENVIRONMENTAL CONTROLLER (IEC) AND POWER SUPPLY (PWR) IAPS MODULES INSPECTION/REPLACEMENT

**TO:**

King Air Owner

**REASON**

Collins has discovered a batch of transistors used in their IAPS Environmental Controller (IEC) and Power Supply (PWR) modules that may have lower than expected reliability.

**COMPLIANCE**

RECOMMENDED. This service document should be accomplished at a scheduled maintenance period or inspection.

**LABOR HOURS**

WORK PHASE	LABOR-HOURS
Environmental Controller (IEC) Modification	2.0
Power Supply (PWR) Modification	2.5

**MATERIAL AVAILABILITY**

No parts are required to complete this service document.

PART NUMBER	AVAILABILITY	COST
822-1167-001	*	*
822-1137-001	*	*
622-9945-021	*	*
622-9945-022	*	*

Contact the Textron Aviation Parts Distribution Repair Team to schedule your unit at [citationrepair@txtav.com](mailto:citationrepair@txtav.com) available 8:00 - 4:30 CST weekdays. Advance notification and coordination is required for Textron Aviation Parts Distribution Repair Team to effectively schedule units, ship to supplier and arrange return. A Customer Repair Request Form is available online at [ww2.txtav.com/Parts](http://ww2.txtav.com/Parts) that is required to ship with every repair. The expected turn time for the supplier supporting this service document is 10 to 14 days.

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For more information, please visit the TAPD Support & Aftermarket Account Management website at <https://ww2.txtav.com/Parts/Promos/TAPD>.

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Based on availability and lead times, parts may require advanced scheduling.

In cases where the required part(s) are approved as exchange, order the exchange part and, upon completion, expedite the return of the removed part to avoid return penalties. Contact the Textron Aviation Parts Distribution Sales Desk for availability of exchange parts.

## WARRANTY

This service document is *recommended*. Eligible airplanes may qualify for parts and labor coverage to the extent noted in the *Labor Hours* and *Material Availability* sections of this document.

**Eligibility:** Airplanes identified within the serial number effectivity of this service document must have active Airframe warranty coverage on the original issue date of this document and the coverage must be active on the day the work is accomplished.

**Parts Coverage:** Textron Aviation-owned and Textron Aviation-authorized Service Facilities, operators, or other maintenance facilities may submit a claim for the parts required to accomplish this service document as defined in the *Material Availability* section of this document.

**Labor Coverage:** Textron Aviation-owned and Textron Aviation-authorized Service Facilities rated to perform maintenance on the specific model of Cessna Aircraft may submit a claim for the labor necessary to accomplish this service document as defined in the *Labor Hours* section of this document.

**Credit Application:** After this service document has been accomplished, a claim must be submitted to Textron Aviation within 30 days of the service document completion. Claims for compliance of this service document are to be filed as a W4 type claim.

Please submit your claim form online at [ww2.txtav.com/Parts](http://ww2.txtav.com/Parts) or email the completed Textron Aviation Claim Form to [warranty@txtav.com](mailto:warranty@txtav.com). If submitted on-line a Return Authorization will be provided. If a paper claim is submitted your claim will be entered into the system and a Return Authorization will be sent to you.

The Return Authorization must accompany any required return parts (see *Material Availability*), to the point of purchase.

Parts to be returned to Textron Aviation Parts Distribution should be forwarded to:

Textron Aviation Parts Distribution  
Warranty Administration  
285 South Greenwich Road  
Bldg B89, Docks 1-4  
Wichita, KS 67206  
USA

**Expiration:** October 11, 2024 (after this date the owner/operator assumes the responsibility for compliance costs)

Textron Aviation reserves the right to void continued airplane warranty coverage for the parts affected by this service document until the service document is accomplished.

**NOTE:** As a convenience, service documents are now available online to all our customers through a simple, free-of-charge registration process. If you would like to sign up, please visit the Customer Access link at [www.txtavsupport.com](http://www.txtavsupport.com) to register.



# SERVICE BULLETIN

**SUBJECT:** INDICATING AND RECORDING SYSTEM - IEC-X00X - REPLACEMENT OF LOW RELIABILITY TRANSISTORS

## TRANSMITTAL INFORMATION SUMMARY

### SUMMARY

This is the initial release of Service Bulletin (SB) IEC-X00X-31-A for the IEC-3001 Integrated Avionics Processor System (IAPS) Environmental Controller.

NOTE: Refer to Section 1.A. for effectivity.

### SERVICE BULLETIN REVISION HISTORY

REVISION	DATE OF RELEASE
Initial Release	July 29, 2022

NOTE: This service bulletin may be installed only by a Collins Aerospace representative or an authorized Collins Aerospace Service Center.

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SERVICE BULLETIN**

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SERVICE BULLETIN**

**1. Planning Information**

A. Effectivity

The modification procedure described in this service bulletin is applicable to the IEC-3001 IAPS Environmental Controller listed in the following table.

UNIT	COLLINS PART NUMBER (CPN)	APPLICABLE TO SERIAL NUMBERS
IEC-3001	822-1167-001	4MCX0M, 4MCX0N, 4MCX4V, 4MCX6M, 4MCX7L, and 4MCX7X

**NOTE:** The modification contained in this service bulletin is strictly applicable to the status(es) listed and not applicable to additional status(es) within the IEC-3001 type number.

B. Concurrent Requirements

None.

C. Reason

(1) Description of Existing Condition

Transistors may fail resulting in loss of IAPS power.

(2) Extent Condition Encountered

Any IEC-3001, CPN 822-1167-001, may be affected.

(3) Expected Benefits of Modification

(a) Improves reliability.

(b) Implementation of this service bulletin is total and permanent.

(4) Safety Intent of Corrective Action

Not applicable.

(5) Regulatory Action

Not applicable.

D. Description

Remove and replace transistors.

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E. Compliance

	Optional - Service Bulletin for convenience or option.
	Desirable- Service Bulletin to introduce improvements.
<b>X</b>	Recommended - Service Bulletin recommended to be accomplished to prevent significant operational disruptions.
	Mandatory - Service Bulletin must be accomplished.

F. Approval

IEC-3001, CPN 822-1167-001, conforms to Federal Aviation Administration (FAA) Technical Standard Order (TSO) C9c, C52b, C115b.

G. Manpower

The total estimated time to accomplish the work in this service bulletin is 2.0 man hours.

TASK	ESTIMATED HOURS
Preparation	1.0
Installation	0.5
Testing	0.5
<b>Total</b>	<b>2.0</b>

H. Weight and Balance

None.

I. Electrical Load Data

Not changed.

J. Software Accomplishment Summary

Not applicable.

K. References

The following publications were used as source data to develop this service bulletin and are available if requested.

- (1) IEC-3000/3001/4000/4001 Environmental Controller Component Maintenance Manual (with illustrated parts list) (CMMPL), CPN 523-0776759 (31-40-88)
- (2) Avionics Standard Shop Practices Instruction Book, CPN 523-0768039 (20-00-01)

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(3) Service Information Letter All Avionics 3-93, titled "Non-Procurement Equipment Cleaning Solutions", CPN 523-0804806

L. Other Publications Affected

None.

M. Interchangeability and Intermixability of Parts

Fully interchangeable.

NOTE: Aircraft level Interchangeability/Intermixability is specified by the Aircraft Original Equipment Manufacturer (OEM) documentation.

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**2. Material Information**

A. Material - Price and Availability

No kit required.

NOTE: The current charge to install this service bulletin is \$1,660 United States Dollars (USD) and may be subject to future price adjustments. Pricing is only valid through January 31, 2023.

B. Industry Support Information

- (1) This service bulletin may be installed only by a Collins Aerospace representative or an authorized Collins Aerospace Service Center.
- (2) For units in warranty, Collins Aerospace will install this service bulletin at no charge for the materials and labor. Units out of warranty must have the service bulletin installation completed prior to July 31, 2023 to qualify for the no charge installation.

NOTE: For equipment returned during the warranty period, Collins Aerospace will install this service bulletin free of charge. If the equipment is out of warranty, Collins Aerospace will install this service bulletin free of charge until July 31, 2023 after which date a charge will apply for the installation of the service bulletin.

NOTE: Free of charge if unit is under warranty and component fails.

C. Material Necessary For Each Component

NOTE: Material pricing is included in total service bulletin price. Refer to Section 2.A.

- (1) Materials to be purchased.

Use the following materials to modify one (1) IEC-3001 IAPS Environmental Controller.

NEW PART NUMBER	KEY WORD	DESCRIPTION	OLD PART NUMBER	QUANTITY	SPECIAL INSTRUCTION/ DISPOSITION
280-3778-050	Modification (MOD) Chart	Information, Label	Not applicable (N/A)	As Required (AR)	N/A
352-0551-010	Transistor	Semiconductor Device, Transistor	352-0551-010	2	Date code must not be 2119.

NOTE: Pricing does not include AR materials.

- (2) Materials supplied by operator.

None required.

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D. Material Necessary for Each Spare

None required.

E. Reidentified Parts

None required.

F. Tooling – Price and Availability

Use the following tools to modify one (1) IEC-3001 IAPS Environmental Controller.

<b>PART NUMBER</b>	<b>QUANTITY</b>	<b>ESTABLISHED PRICE</b>	<b>DESCRIPTION</b>	<b>ESTABLISHED DELIVERY SCHEDULE</b>	<b>MANUFACTURER'S NAME (IF NOT COLLINS AEROSPACE)</b>
622-7412-502 or equivalent	1	N/A	CTS-2000 Test Station	N/A	N/A
822-0438-001	1	N/A	CTA-2026 Test Adapter	N/A	N/A

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**3. Accomplishment Instructions**

A. Modification Procedure

**WARNING: BEFORE HANDLING ANY UNIT OR UNIT COMPONENT, GROUND THE REPAIR OPERATOR THROUGH A CONDUCTIVE WRIST STRAP OR OTHER DEVICE THAT USES A 470 K $\Omega$  OR 1 M $\Omega$  SERIES RESISTOR TO PREVENT PERSONAL INJURY BY LIMITING CURRENT THROUGH THE WRIST STRAP TO GROUND.**

**WARNING: SERVICE PERSONNEL ARE TO OBEY STANDARD SAFETY PRECAUTIONS, SUCH AS WEARING SAFETY GLASSES, TO PREVENT PERSONAL INJURY WHILE INSTALLING OR DOING MAINTENANCE ON THIS UNIT.**

**WARNING: USE CARE WHEN USING SEALANTS, SOLVENTS AND OTHER CHEMICAL COMPOUNDS. DO NOT EXPOSE TO EXCESSIVE HEAT OR OPEN FLAME. USE ONLY WITH ADEQUATE VENTILATION. AVOID PROLONGED BREATHING OF VAPORS AND AVOID PROLONGED CONTACT WITH SKIN. OBSERVE ALL CAUTIONS AND WARNINGS GIVEN BY THE MANUFACTURER.**

**WARNING: REMOVE ALL POWER TO THE UNIT BEFORE DISASSEMBLING IT. DISASSEMBLING THE UNIT WITH POWER CONNECTED IS DANGEROUS TO LIFE.**

**CAUTION: THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS THAT CAN BE DAMAGED BY STATIC VOLTAGES PRESENT IN MOST REPAIR FACILITIES.**

**NOTE: For detailed repair/cleaning instructions, refer to the referenced Avionics Standard Shop Practices Instruction Book and the referenced Service Information Letter All Avionics 3-93, titled "Non-Procurement Equipment Cleaning Solutions".**

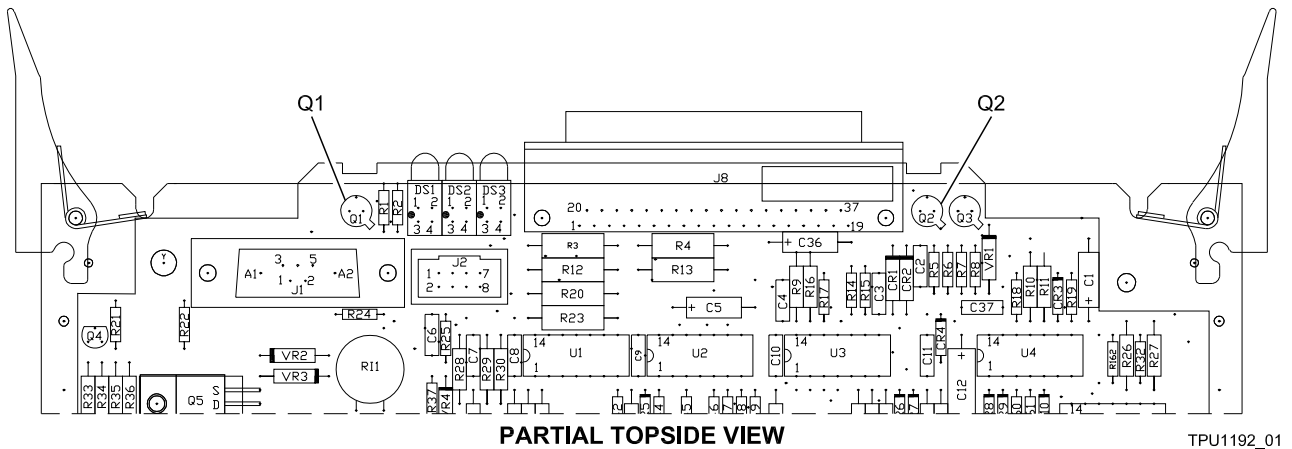
**NOTE: Refer to the Disassembly and Assembly instructions in the referenced CMMPL.**

**NOTE: Use the CTS-2000 Test Station, CPN 622-7412-502 or equivalent, and CTA-2026 Test Adapter, CPN 822-0438-001, as required to perform Service Bulletin IEC-X00X-31-A.**

- (1) Disassemble the IEC-3001 as required to remove the IEC-3001 Environmental Control Card A1, CPN 687-0894-001, in accordance with the disassembly instructions in the referenced CMMPL.

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- (2) Refer to Figure 1, locate transistor Q1 and Q2 on the IEC-3001 Environmental Control Card A1, CPN 687-0894-001.



Transistor Q1 and Q2 Location Diagram  
Figure 1

- (3) If either transistor Q1 or Q2 has a date code of 2119, or is not visible, continue to Step 3.A.(3)(a). If the date code on both transistor Q1 and Q2 is not 2119, proceed to Step 3.A.(4).
- (a) Remove conformal coat from around component(s) to be replaced in accordance with the General Repair Procedures in the referenced CMMPL.
- (b) Locate, remove, and discard transistors Q1 and/or Q2. Install new transistors Q1 and/or Q2, CPN 352-0551-010. Ensure the new transistor, CPN 352-0551-010, does not have a date code of 2119.
- NOTE:** Only replace resistors Q1 and/or Q2 if it has a date code of 2119, or if the date code is not able to be read. If only one (1) component has the date code of 2119, only the affected component needs to be replaced.
- (c) Reapply conformal coat in accordance with the Repair Procedures in the referenced CMMPL around replaced component(s).
- (4) If MOD chart is not already on the circuit card, cut the word MOD and seven (7) squares from MOD chart, CPN 280-3778-050. Remove protective backing, then apply MOD chart to circuit card.
- (5) Use permanent ink to mark SB A on the MOD chart.
- (6) Reassemble the unit in accordance with the assembly instructions in the Assembly section of the referenced CMMPL.

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B. Testing Procedure

Test the unit in accordance with the test procedures in the Testing and Fault Isolation section of the referenced CMMPL.

C. Identification Procedure

NOTE: The identification procedure must be accomplished in order for the service bulletin to be complete.

Obliterate or use permanent ink to mark out the letter A on the unit modification plate.





# SERVICE BULLETIN

**SUBJECT:** INDICATING AND RECORDING SYSTEM - PWR-X00X - REPLACEMENT OF LOW RELIABILITY TRANSISTORS

## TRANSMITTAL INFORMATION SUMMARY

### SUMMARY

This is the initial release of Service Bulletin (SB) PWR-X00X-31-B for the PWR-3000 and PWR-4000 Integrated Avionics Processing System (IAPS) Power Supply.

NOTE: Refer to Section 1.A. for effectivity.

### SERVICE BULLETIN REVISION HISTORY

REVISION	DATE OF RELEASE
Initial Release	July 29, 2022

NOTE: This service bulletin may be installed only by a Collins Aerospace representative or an authorized Collins Aerospace Service Center.

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**1. Planning Information**

A. Effectivity

The modification procedure described in this service bulletin is applicable to the PWR-3000 and PWR-4000 IAPS Power Supply listed in the following table.

UNIT	COLLINS PART NUMBER (CPN)	APPLICABLE TO SERIAL NUMBERS
PWR-3000	822-1137-001	4RT9PV, 4RT9PX, 4RT9RN, 4RTC29, 4RT9R0, 4RT9Y9, 4RTC15, 4RTC28, 4RTC2L, 4RTC2C, 4RTC1C, 4RT9YC, 4RTC19, 4RTC2H, 4RTC2G, 4RTC2K, 4RTC2D, 4RTC97, 4RTC93, 4RTC95, 4RTC2N, 4RT9RG, 4RTC9C, 4RTC94, 4RTC96, 4RTCKV, 4RTC98, 4RTCL8, 4RTCMX, 4RTCL9, 4RTCL6, 4RTCL5, 4RTCLC, 4RTCV3, 4RTC9D, 4RTC99, 4RTC9F, 4RTCMV, 4RTFM4, 4RTCL4, 4RTCL7, 4RTCMY, 4RTCR0, 4RTCN0, 4RTFM0, 4RTFLX, 4RTCVD, 4RTCR1, 4RTCN1, 4RTCR2, 4RTFLY, 4RTFM3, 4RTFLV, 4RTCVH, 4RTFMF, 4RTCVF, 4RTCVG, 4RTFMD, and 4RTFNY
PWR-4000	622-9945-021	4RTC39, 4RTC3C, 4RTCN5, 4RTCN4, 4RTCLK, 4RTCLL, 4RTCLG, 4RTCLH, 4RTCLF, 4RT9R5, 4RT9R8, 4RT9R9, 4RT9R6, 4RT9R7, 4RT9Y6, 4RTC4V, 4RT9Y8, 4RTC4R, 4RTC43, 4RTC47, 4RTC4T, 4RTC4Y, 4RTCLT, 4RTC4X, 4RTC50, 4RTCLN, 4RTCLR, 4RTCN9, and 4RTCLM
PWR-4000	622-9945-022	4RTC39, 4RTC3C, 4RTCN5, 4RTCN4, 4RTCLK, 4RTCLL, 4RTCLG, 4RTCLH, 4RTCLF, 4RT9R5, 4RT9R8, 4RT9R9, 4RT9R6, 4RT9R7, 4RT9Y6, 4RTC4V, 4RT9Y8, 4RTC4R, 4RTC43, 4RTC47, 4RTC4T, 4RTC4Y, 4RTCLT, 4RTC4X, 4RTC50, 4RTCLN, 4RTCLR, 4RTCN9, and 4RTCLM

**NOTE:** The modification contained in this service bulletin is strictly applicable to the status(es) listed and not applicable to additional status(es) within the PWR-3000 and PWR-4000 type number.

B. Concurrent Requirements

None.

C. Reason

(1) Description of Existing Condition

Transistors may fail resulting in loss of Integrated Avionics Processing System (IAPS) power.

(2) Extent Condition Encountered

Serial numbers listed in Section 1.A. may be affected.

(3) Expected Benefits of Modification

(a) Improves reliability.

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(b) Implementation of this service bulletin is total and permanent.

(4) Safety Intent of Corrective Action

Not applicable.

(5) Regulatory Action

Not applicable.

D. Description

Remove and replace transistors.

E. Compliance

	Optional - Service Bulletin for convenience or option.
	Desirable- Service Bulletin to introduce improvements.
<b>X</b>	Recommended - Service Bulletin recommended to be accomplished to prevent significant operational disruptions.
	Mandatory - Service Bulletin must be accomplished.

F. Approval

(1) PWR-3000, CPN 822-1137-001, conforms to Federal Aviation Administration (FAA) Technical Standard Order (TSO) C9c, C52b, C115b.

(2) PWR-4000, CPN 622-9945-021/-022, conforms to FAA TSO C9c, C52a, C115.

(3) PWR-4000, CPN 622-9945-022, conforms to FAA TSO C9c, C52a, C115b.

G. Manpower

The total estimated time to accomplish the work in this service bulletin is 2.5 man hours.

TASK	ESTIMATED HOURS
Preparation	1.0
Installation	0.5
Testing	1.0
<b>Total</b>	<b>2.5</b>

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H. Weight and Balance

None.

I. Electrical Load Data

Not changed.

J. Software Accomplishment Summary

Not applicable.

K. References

The following publications were used as source data to develop this service bulletin and are available if requested.

- (1) PWR-851A/3000/4000 IAPS Power Supply Component Maintenance Manual (with illustrated parts list) (CMMPL), CPN 523-0818314 (31-42-42)
- (2) Avionics Standard Shop Practices Instruction Book, CPN 523-0768039 (20-00-01)
- (3) Service Information Letter All Avionics 3-93, titled "Non-Procurement Equipment Cleaning Solutions", CPN 523-0804806

L. Other Publications Affected

None.

M. Interchangeability and Intermixability of Parts

Fully interchangeable.

NOTE: Aircraft level Interchangeability/Intermixability is specified by the Aircraft Original Equipment Manufacturer(OEM) documentation.

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**2. Material Information**

A. Material - Price and Availability

No kit required.

NOTE: The current charge to install this service bulletin is \$1,769 United States Dollars (USD) and may be subject to future price adjustments. Pricing is only valid through January 31, 2023.

B. Industry Support Information

- (1) This service bulletin may be installed only by a Collins Aerospace representative or an authorized Collins Aerospace Service Center.
- (2) For units in warranty, Collins Aerospace will install this Service Bulletin at no charge for the materials and labor. Units out of warranty must have the service bulletin installation completed prior to July 31, 2023 to qualify for the no charge installation.

NOTE: For equipment returned during the warranty period, Collins Aerospace will install this service bulletin free of charge. If the equipment is out of warranty, Collins Aerospace will install this service bulletin free of charge until July 31, 2023 after which date a charge will apply for the installation of the service bulletin.

C. Material Necessary For Each Component

NOTE: Material pricing is included in total service bulletin price. Refer to Section 2.A.

- (1) Materials to be purchased.

Use the following materials to modify one (1) PWR-X00X IAPS Power Supply.

NEW PART NUMBER	KEY WORD	DESCRIPTION	OLD PART NUMBER	QUANTITY	SPECIAL INSTRUCTION/ DISPOSITION
280-3778-050	Modification (MOD) Chart	Label, Information	Not Applicable (N/A)	As Required (AR)	N/A
352-0551-010	Transistor	Semiconductor Device, Transistor	N/A	4	Date code must not be 2119

NOTE: Pricing does not include AR materials.

- (2) Materials supplied by operator.

None required.

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D. Material Necessary for Each Spare

None required.

E. Reidentified Parts

None required.

F. Tooling – Price and Availability

Use the following tools to modify one (1) PWR-3000 or PWR-4000 IAPS Power Supply.

<b>PART NUMBER</b>	<b>QUANTITY</b>	<b>ESTABLISHED PRICE</b>	<b>DESCRIPTION</b>	<b>ESTABLISHED DELIVERY SCHEDULE</b>	<b>MANUFACTURER'S NAME (IF NOT COLLINS AEROSPACE)</b>
622-7412-502 or Equivalent	1	N/A	CTS-2000 Test Station	N/A	N/A
822-0438-001	1	N/A	CTA-2026 Test Adapter	N/A	N/A

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**3. Accomplishment Instructions**

A. Modification Procedure

**WARNING: BEFORE HANDLING ANY UNIT OR UNIT COMPONENT, GROUND THE REPAIR OPERATOR THROUGH A CONDUCTIVE WRIST STRAP OR OTHER DEVICE THAT USES A 470 K $\Omega$  OR 1 M $\Omega$  SERIES RESISTOR TO PREVENT PERSONAL INJURY BY LIMITING CURRENT THROUGH THE WRIST STRAP TO GROUND.**

**WARNING: SERVICE PERSONNEL ARE TO OBEY STANDARD SAFETY PRECAUTIONS, SUCH AS WEARING SAFETY GLASSES, TO PREVENT PERSONAL INJURY WHILE INSTALLING OR DOING MAINTENANCE ON THIS UNIT.**

**WARNING: USE CARE WHEN USING SEALANTS, SOLVENTS AND OTHER CHEMICAL COMPOUNDS. DO NOT EXPOSE TO EXCESSIVE HEAT OR OPEN FLAME. USE ONLY WITH ADEQUATE VENTILATION. AVOID PROLONGED BREATHING OF VAPORS AND AVOID PROLONGED CONTACT WITH SKIN. OBSERVE ALL CAUTIONS AND WARNINGS GIVEN BY THE MANUFACTURER.**

**WARNING: REMOVE ALL POWER TO THE UNIT BEFORE DISASSEMBLING IT. DISASSEMBLING THE UNIT WITH POWER CONNECTED IS DANGEROUS TO LIFE.**

**CAUTION: TURN OFF POWER BEFORE DISCONNECTING ANY UNIT FROM WIRING. DISCONNECTING THE UNIT WITHOUT TURNING POWER OFF MAY CAUSE DAMAGE.**

**CAUTION: THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS THAT CAN BE DAMAGED BY STATIC VOLTAGES PRESENT IN MOST REPAIR FACILITIES.**

**NOTE: For detailed repair/cleaning instructions, refer to the referenced Avionics Standard Shop Practices Instruction Book and the referenced Service Information Letter All Avionics 3-93, titled "Non-Procurable Equipment Cleaning Solutions".**

**NOTE: Use the CTS-2000 Test Station, CPN 622-7412-502 or equivalent and CTA-2026 Test Adapter, CPN 822-0438-001, as required to perform Service Bulletin IEC-X00X-31-A.**

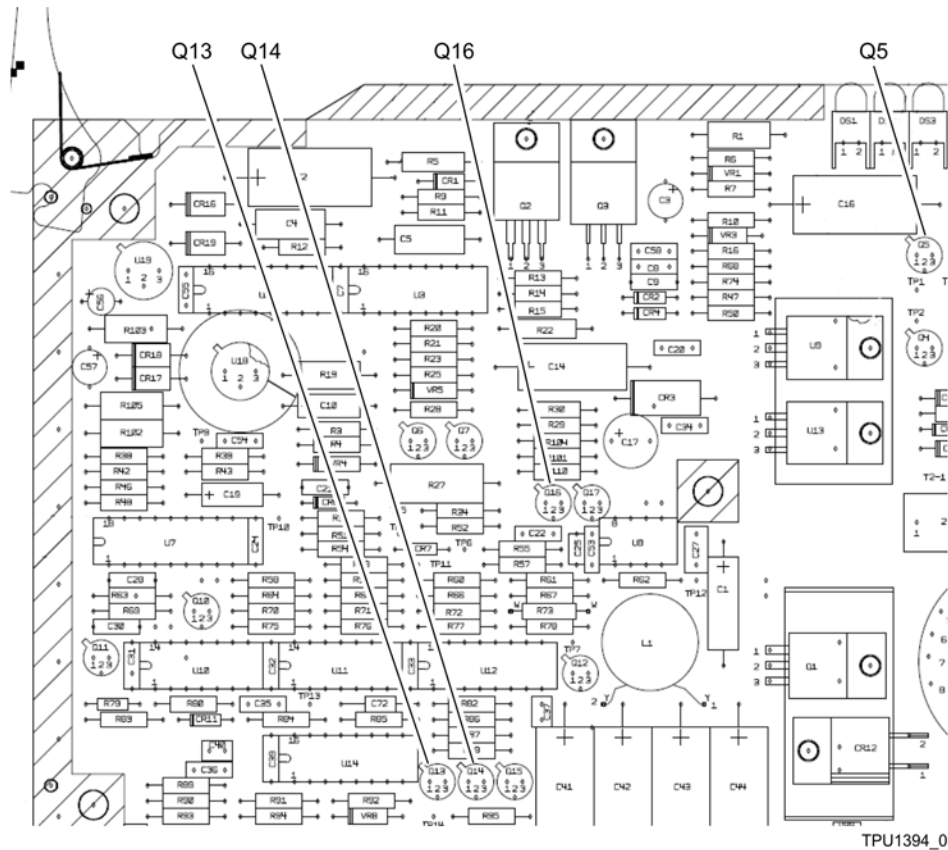
**NOTE: Refer to the Disassembly and Assembly instructions in the referenced CMMPL.**

(1) Disassemble the PWR-3000 or PWR-4000 as required to remove the PWR-3000 or PWR-4000, Power Supply Circuit Card A1, CPN 687-0896-001, in accordance with the disassembly instructions in the referenced CMMPL.



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- (2) Using Figure 1, locate transistors Q5, Q13, Q14, Q16 on the PWR-3000 or PWR-4000 Power Supply Circuit Card A1, CPN 687-0896-001.



PWR-3000 or PWR-4000, Power Supply Circuit Card A1, CPN 687-0896-001, Component Location Diagram  
Figure 1

- (3) Refer to Figure 1. If transistors Q5, Q13, Q14, or Q16 have a date code of 2119 or is not visible, proceed to Step 3.A.(3)(a). If the date code on transistors Q5, Q13, Q14, and Q16 is not 2119, proceed to Step 3.A.(4).
- (a) Remove conformal coat from around component(s) to be replaced in accordance with the General Repair Procedures in the referenced CMMPL.
  - (b) Locate, remove, and discard any 2119 date coded transistors amongst transistors Q5, Q13, Q14, Q16. Replace any removed 2119 date coded transistors with new non-2119 date coded transistors, CPN 351-0551-010.

**NOTE:** Only replace 2119 date coded transistors, or if the date code is not able to be read. If only one (1) component has the date code of 2119, only the affected component needs to be replaced.

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- (c) Reapply conformal coat in accordance with the Repair Procedures in the referenced CMMPL around replaced component(s).
- (4) If MOD chart is not already on the circuit card, cut the word MOD and 10 squares from MOD chart, CPN 280-3778-050. Remove protective backing, then apply MOD chart to circuit card.
- (5) Use permanent ink to mark SB B on the MOD chart.
- (6) Reassemble the unit in accordance with the assembly instructions in the Assembly section of the referenced CMMPL.

**B. Testing Procedure**

Test the unit in accordance with the test procedures in the Testing and Fault Isolation section of the referenced CMMPL.

**C. Identification Procedure**

NOTE: The identification procedure must be accomplished in order for the service bulletin to be complete.

Obliterate or use permanent ink to mark out the number/letter B on the unit modification plate.