P U B L I C A T I O N T R A N S M I T T A L

International Aero Engines

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DATE: Sep.12/11

V2500-A5 PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits the Initial Issue of Service Bulletin V2500-ENG-73-0227 and the Revision 1 of Hamilton Sundstrand Service Bulletin EEC150-40-73-28.

Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 5 of the IAE Service Bulletin V2500-ENG-73-0227.	Initial Issue.
	Page 1 of the Appendix.	Initial Issue.
	Pages 1 to 7 of the Hamilton Sundstrand Service Bulletin EEC150-40-73-28.	Revision 1.

V2500-ENG-73-0227
Transmittal - Page 1 of 1

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise IAE International Aero Engines AG

SERVICE BULLETIN

ENGINE - FUEL AND CONTROL - CONTROL, ELECTRONIC ENGINE - REPLACEMENT OF THE TRANSIENT VOLTAGE SUPPRESSORS

1. Planning Information

A. Effectivity

(1) Airbus A319

V2522-A5, V2524-A5, V2527M-A5 (A5 Standard and A5 SelectOne™ Retrofit Standard).

Engine Serial Nos. - Any engine as applicable.

V2522-A5, V2524-A5, V2527M-A5 (A5 SelectOne™ Production Standard).

Engine Serial Nos. - Any engine as applicable.

(2) Airbus A320

V2527-A5, V2527E-A5 (A5 Standard and A5 SelectOne™ Retrofit Standard).

Engine Serial Nos. - Any engine as applicable.

V2527-A5, V2527E-A5 (A5 SelectOne™ Production Standard).

Engine Serial Nos. - Any engine as applicable.

(3) Airbus A321

V2530-A5, V2533-A5 (A5 Standard and A5 SelectOne™ Retrofit Standard).

Engine Serial Nos. - Any engine as applicable.

V2530-A5, V2533-A5 (A5 SelectOne™ Production Standard).

Engine Serial Nos. - Any engine as applicable.

B. Compliance

Category VB

Vendor Bulletin - See Reference 1, Hamilton Sundstrand Service Bulletin No. EEC150-40-73-28 for Compliance Category Code.

C. Approval Data

The compliance statement and the procedures described in this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.

D. References

(1) Hamilton Sundstrand Service Bulletin No. EEC150-40-73-28.

(2) V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA, S-V2500-2IB, S-V2500-3IA, S-V2500-3IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA and S-V2500-7IB), Chapter/Section 73-22-34.

(3) V2500 Engine Illustrated Parts Catalogs (S-V2500-2SA, S-V2500-2SB, S-V2500-5SA, S-V2500-5SB, S-V2500-6SA, S-V2500-6SB, S-V2500-7SA and S-V2500-7SB), Chapter/Section 73-22-34.

E. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (No)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

2. Material Information

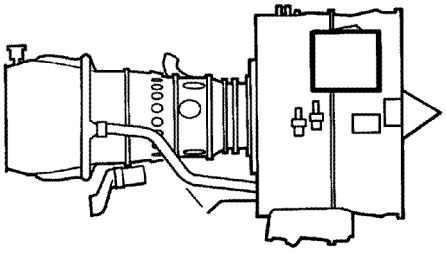
Not applicable.

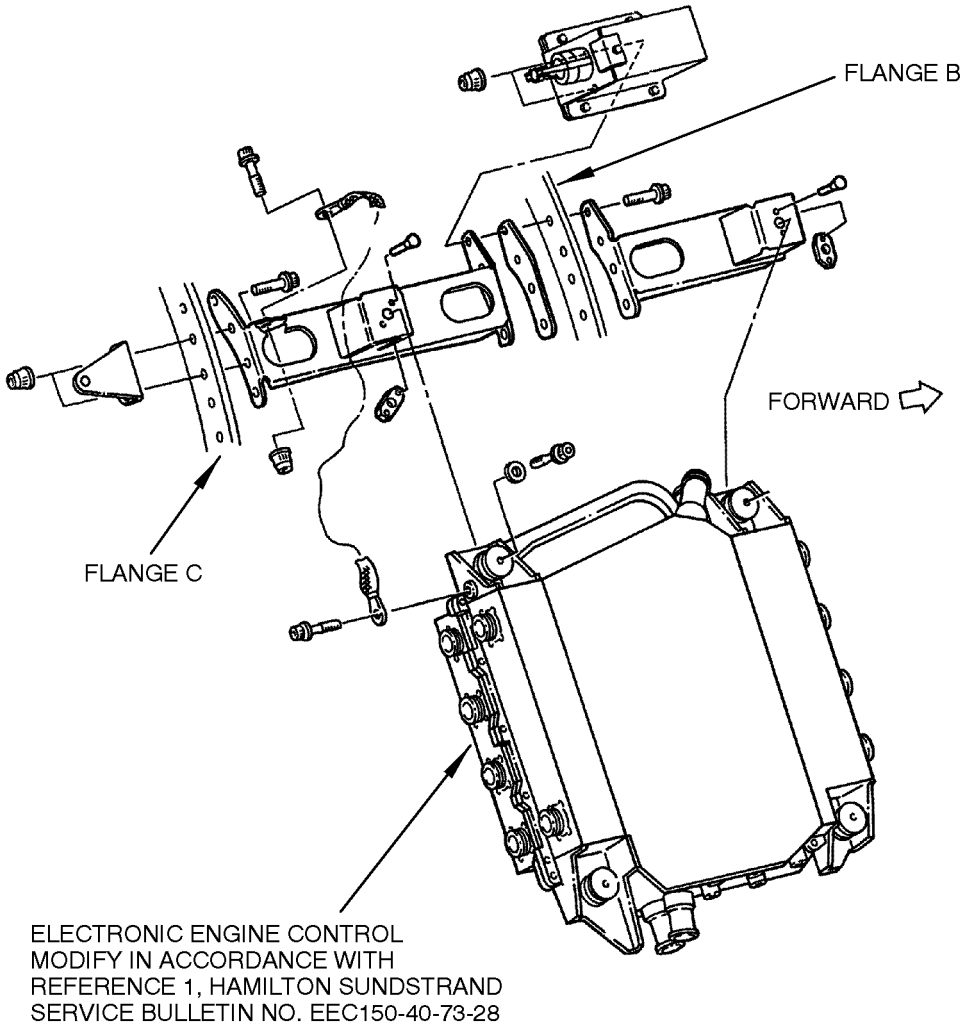
3. Accomplishment Instructions

(1) Modify your Electronic Engine Control (EEC) in accordance with Reference 1, Hamilton Sundstrand Service Bulletin No. EEC150-40-73-28. See Figure 1 for the location of the EEC.

(2) Recording Instructions

(a) A record of accomplishment is required.





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LOCATION OF THE ELECTRONIC ENGINE CONTROL
73-22-34
FIGURE 1

APPENDIX

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EA11VC135	DTL/JDH

Reference 1, Hamilton Sundstrand Service Bulletin No. EEC150-40-73-28 follows:

Hamilton Sundstrand
A United Technologies Company

SERVICE BULLETIN

ENGINE FUEL AND CONTROL - EEC150-40 ELECTRONIC ENGINE CONTROL - TRANSIENT VOLTAGE SUPPRESSOR REPLACEMENT

REVISIONS

Revision 1

This revision: (1) Adds serial number to Effectivity statement on page 2, (2) Adds Maastricht address to Industry Support Information on page 5, and (3) Changes inkmark to SB28 in Accomplishment Instructions on pages 6 and 7.

Issue	Date
Basic	Apr 16/10
Revision 1	Aug 25/10

1. PLANNING INFORMATION

A. Effectivity

(1) Hamilton Sundstrand EEC150-40 ELECTRONIC ENGINE CONTROL, PN 824972-X-YYY with Processor Circuit Card, PN 824974-X manufactured between April 2006 and March 2009 and with serial numbers between 0604XXXX and 0903XXXX, or 200604XXX and 200903XXX. If the EEC serial number is greater than 2540-3780, the intent of this Service Bulletin has been completed and no further action is required. This EEC is used on Airbus A319, A320, and A321 aircraft.

NOTE: Included in this Effectivity are Processor Circuit Cards manufactured in Puerto Rico that have a prefix of "PRE" before the serial number.

NOTE: X = all hardware configurations and YYY = all software configurations.

(2) Hamilton Sundstrand EEC150-40 ELECTRONIC ENGINE CONTROL, PN 824972-X-YYY with Processor Circuit Card, PN 824974-X, sent to Hamilton Sundstrand Phoenix for Transorb inspection with part numbers included in Table 1.

Table 1
EEC Serial Numbers Sent to Hamilton Sundstrand Phoenix for Transorb Inspection

2540-2108	2540-3281	2540-3484
2540-3489	2540-3500	2540-3604
2540-2050	2540-3136	2540-3501

B. Concurrent Requirements

(1) None

C. Reason

(1) Problem

(a) There have been 4 instances since 2008 where the N2 overspeed system has inadvertently activated due to a false high N2 signal. This resulted in the engine being commanded to a subidle condition.

(2) Cause

(a) Transient voltage suppressor devices VR301 and VR302 used in the channel A N2 differential input circuit can intermittently open, which can cause an erroneously high N2 speed indication to occur. The duration of the erroneous N2 increase is short, and is not noticeable to the flight crew.

(3) Solution

(a) Replace suspect lot date code transient voltage suppressor devices VR301 and VR302 with non-suspect parts. Fleet safety assessment has concluded that no immediate action is required.

(4) Substantiation

(a) Destructive analysis of suspect lot date code transient voltage suppressor devices determined that the conductive metallic layer was non-conforming, causing separation of the lead frame from the die.

D. Description

(1) This bulletin gives the instructions to replace Transient Voltage Suppressor VR301 and VR302 within certain lot date codes and serial number ranges.

E. Compliance

(1) Compliance Code 4 - You can do this service bulletin the first time the EEC150-40 is at a maintenance base that can do the procedures regardless of other planned maintenance action.

(a) This compliance code applies to the end assembly (Processor Circuit Card) as well as to spare and rotable Processor Circuit Cards.

F. Approval

(1) The repairs or modifications herein have been reviewed in accordance with the applicable Federal Aviation Regulations and are FAA-approved for the EEC150-40 Electronic Engine Control listed.

G. Manpower

(1) Approximately 3.0 man-hours are required to do these Service Bulletin procedures when you do component maintenance. This estimate does not include any time for test.

H. Weight and Balance

(1) None

I. Electrical Load Data

(1) Not changed

J. Software Accomplishment Summary

(1) Not Applicable

K. References

(1) Hamilton Sundstrand Component Maintenance Manual (CMM) 73-28-02

(2) Hamilton Sundstrand Illustrated Parts Catalog (IPC) 73-28-02

(3) Hamilton Sundstrand Standard Electronics Practices Manual (SEPM) 20-00-02

(4) Hamilton Sundstrand Engineering Change - Not Applicable

L. Other Publications Affected

(1) Hamilton Sundstrand CMM 73-28-02 will be revised to incorporate this bulletin.

(2) Hamilton Sundstrand IPC 73-28-02 will be revised to incorporate this bulletin.

M. Interchangeability or Intermixability of Parts

(1) The incorporation of this bulletin does not affect the interchangeability or intermixability of the EEC150-40.

2. MATERIAL INFORMATION

A. Material - Price and Availability

(1) Hamilton Sundstrand will supply the replacement parts required for accomplishment of this bulletin on a no-charge basis until March 2013. The replacement parts are currently available in limited quantities (refer to Table 1 of this bulletin for the parts breakdown). Operators approved by Hamilton Sundstrand to perform the modification of units at their facility should place a single "no-charge" order to Hamilton Sundstrand. Operators can forward these orders to their assigned Hamilton Sundstrand Commercial Spares Administrator (or fax to +1-815-226-2624, if the responsible Administrator is not known). In addition, operators can also use the Hamilton Sundstrand website at www.hamiltonsundstrand.com to contact the Commercial Spares group. Upon entering the website, select "Customer Service" followed by "Commercial Spares" for other contact and order processing options that are available. Orders must clearly reference fleet requirements, noting the bulletin number, serial numbers of affected units, total quantity of parts, and anticipated incorporation schedule. Hamilton Sundstrand will acknowledge the operator order with an established delivery rate.

(2) Refer to Table 2 of this bulletin for a breakdown of the individual parts. Hamilton Sundstrand will install these parts at no charge until March 2013.

B. Industry Support Information

(1) Hamilton Sundstrand will also give a maximum labor allowance of 3.0 man-hours multiplied by the operator's current approved hourly rate for accomplishment of this bulletin. This estimate does not include any time for test. The labor allowance will expire March 2013. No (or a partial) labor allowance will be provided if the EEC150-40 is completely disassembled for another reason.

(2) Hamilton Sundstrand will incorporate this modification into returned units at no charge until March 2013. Contact Hamilton Sundstrand at the following address for scheduling information:

Hamilton Sundstrand
One Hamilton Road
Dock W
Windsor Locks, CT 06096
USA

FAA Repair Station License Number SI3R842L

or

Hamilton Sundstrand
Customer Support Center - Maastricht B.V.
Maastricht-Aachen Airport
Horsterweg 7
6199 AC Maastricht Airport
The Netherlands

FAA Repair Station License Number CW5Y794M

C. Material Necessary For Each Unit

(1) Refer to Hamilton Sundstrand CMM 73-28-02 for expendable parts information.

(2) Material to be Purchased

Table 2
New Parts Required

New Part Number	Keyword	Old Part Number	Qty	Unit Price (Note 1)	Special Instructions /Disposition
HS5P4818-008-0008	Transient Voltage Suppressor	HS5P4818-008-0008	2	Not Applicable	Discard

Table 2 Note 1: Hamilton Sundstrand will provide (or install) the noted part at no charge (refer to paragraph 2.B. of this bulletin for details).

(3) Material Supplied by the Operator

(a) None

D. Material Necessary For Each Spare

(1) The same as the material necessary for each unit.

E. Tooling - Price and Availability

(1) No tooling other than that required for shop maintenance of the EEC150-40 is required to do this modification.

3. ACCOMPLISHMENT INSTRUCTIONS

A. General

(1) The user should obtain the material safety data sheets [Occupational Safety and Health Act (OSHA) Form 20 or equivalent] from the manufacturers or suppliers of materials to be used. The user must become completely familiar with the manufacturer/ supplier information and adhere to the procedures, recommendations, warnings, and cautions of the manufacturer/supplier for the safe use, handling, storage, and disposal of these materials. The user should also read the long version of the warnings contained in this bulletin. The long version warnings are contained in Hamilton Sundstrand Warnings Registry 341-006 available free of charge to all organizations that are on distribution for this bulletin. The Warnings Registry 341-006 is also available at www.hsvas.com.

CAUTION: OBEY THE INSTRUCTIONS IN STANDARD ELECTRONIC PRACTICES MANUAL 20-00-02 OF THIS SERVICE BULLETIN WHEN YOU TOUCH THE EEC150-40 OR ITS COMPONENTS. IT IS AN ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICE. IT CAN BE DAMAGED BY ELECTROSTATIC DISCHARGE WHICH CAN BE TRANSMITTED BY TOUCH.

(2) If SB28 is inkmarked next to the HS Identification Plate on the EEC or on a spare processor board, or if the EEC serial number is greater than 2540-3780, the intent of this Service Bulletin has been completed and no further action is required.

NOTE: This Service Bulletin applies to EEC Channel A and Channel B.

B. Disassembly

(1) Refer to 20-00-02 to do these procedures unless otherwise noted.

(2) Disassemble the EEC150-40 as instructed in the following steps so that modifications to the Processor Input Circuit Card can be made.

CAUTION: USE APPROVED ESD-SAFE PROCEDURES WHEN YOU DISASSEMBLE THE EEC150-40 ELECTRONIC ENGINE CONTROL. REFER TO THE STANDARD ELECTRONIC PRACTICES MANUAL 20-00-02 FOR ESD PRECAUTIONS.

NOTE: For spare Processor Circuit Cards, go to paragraph B(2)(b).

(a) Disassemble the EEC150-40 per DISASSEMBLY in CMM 73-28-02 to gain access and to perform the required modifications.

(b) Look at the serial number on the Processor Circuit Card PN 824974-X.

1 If the serial number is between 0604XXXX and 0903XXXX, or between 200604XXX and 200903XXX, complete the intent of this Service bulletin.

2 If the serial number is not between 0604XXXX and 0903XXXX, or 200604XXX and 200903XXX, or in Table 1, reidentify the EEC with inkmark SB28 next to the HS Identification Plate. Replacement of VR301 and VR302 will not be necessary.

NOTE: Included in this Effectivity are Processor Circuit Cards manufactured in Puerto Rico that have a prefix of "PRE" before the serial number.

C. Modification

(1) Replace VR301 and VR302 Transient Voltage Suppressors PN 5P4818-008-0008 per REPAIR in CMM 73-28-02. Refer to IPL 73-28-02 (Items 635 and 640, Figure 7) for parts location.

(2) Inkmark SB28 on Processor Circuit Card PN 824974-X.

D. Assembly

(1) Assemble the EEC150-40 as instructed in the following steps.

CAUTION: USE APPROVED ESD-SAFE PROCEDURES WHEN YOU ASSEMBLE THE EEC150-40 ELECTRONIC ENGINE CONTROL. REFER TO THE STANDARD ELECTRONIC PRACTICES MANUAL 20-00-02 FOR ESD PRECAUTIONS.

(a) Assemble the EEC150-40 per ASSEMBLY in CMM 73-28-02.

E. Test

(1) Test the EEC150-40 in accordance with the TESTING and FAULT ISOLATION procedures of CMM 73-28-02.

F. Identification

(1) Inkmark SB28 on the EEC150-40 Housing next to the HS Identification plate.

SERVICE BULLETIN FEEDBACK FORM

Please use this form to give feedback on the quality of this Service Bulletin. The input you provide will be used to analyse areas of improvement and to take action to further improve on the quality of our Service Bulletins.

We thank you for the time you spent in completing this form.

Please rate on a scale of 1 to 5, with 5 being the highest score:

- General quality rating of this Service Bulletin	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Accomplishment Instructions	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Illustration	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Is this Service Bulletin easy to understand ?	☐ Yes ☐ No

If you have had difficulties to perform this Service Bulletin please quote below the area(s) and give a short description of the issue:

Planning Information Section:		Material Information Section:	Accomplishment Instruction Section:
☐ 1.A.	☐ 1.I.	☐ 2.A.	☐ General
☐ 1.B.	☐ 1.J.	☐ 2.B.	☐ Get Access
☐ 1.C.	☐ 1.K.	☐ 2.C.	☐ Removal/Installation
☐ 1.D.	☐ 1.L.	☐ 2.D.	☐ Inspection
☐ 1.E.	☐ 1.M.	☐ 2.E.	☐ Test
☐ 1.F.	☐ 1.N.	☐ 2.F.	☐ Close the Access
☐ 1.G.	☐ 1.O.		☐ Log Book Entry
☐ 1.H	☐ 1.P.		

Explanatory notes:

Operator:	Overhaul Site:
Name/Title:	Date:

Please send the completed Service Bulletin Feedback Form to IAE, Customer Support.
Email: GPIAECUSTCOM@IAEV2500.COM