Service Information Letter

from AVIONIC INSTRUMENTS, LLC

Notification of Product Improvement for 4C3500 High Voltage Frequency Converters

Aircraft Effectivity: As Applicable

Manufacturer's Part Numbers: 4C3500-( )

4C3500-1B-1960
4C3500-1B-NB-1961
4C3500-3A-1968
4C3500-3A-NBH-1991
4C3500-3AH-1993
4C3500-3A-NBH-2023
4C2200-3A-NB-2049
4C3500-2A-NBH-RR-2101
4C3500-3A-220-NBH-2126
4C3500-2A-NBH-2144
4C3500-3A-NBH-2328
4C3500-3A-NBH-2330
4C3500-2A-NBH-2410
4C3500-2A-NBH-2418

Converter Effectivity: Units in field not identified as MOD J.

Background

Simultaneous conduction of upper & lower Low Speed Switches could result in a short circuit across the 380v DC Link voltage bus. See Figure 1 illustrating this “cross conduction event”. Instantaneous power dissipation on these switches would then be excessive, exceeding the device rating. As a result unrepairable damage to the power pc board may occur, e.g., Power PC Board burnt or discolored, as well as other assemblies that are in close proximity to the power board.

To prevent high levels of damage to the power boards and the control board of the frequency converters, Avionic Instruments is upgrading the above units to Mod “J”. This product improvement adds fast acting fuses for Fuse (F1) to 30A (3 10A fuses / P/N 1-001-0814-0009) which replaces the 30A single fuse which is currently being used as this enables the fuse to react more quickly to prevent damage.

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Engineering testing was done with the fast acting fuses by simulating a bridge failure and the fuses opened-up before any damage to PCB's occurred. An ECN will be generated to change the fuse configuration. If there is a failure on the bridge assembly the fuse will open, removing power to the bridge and preventing further damage to PCB's.

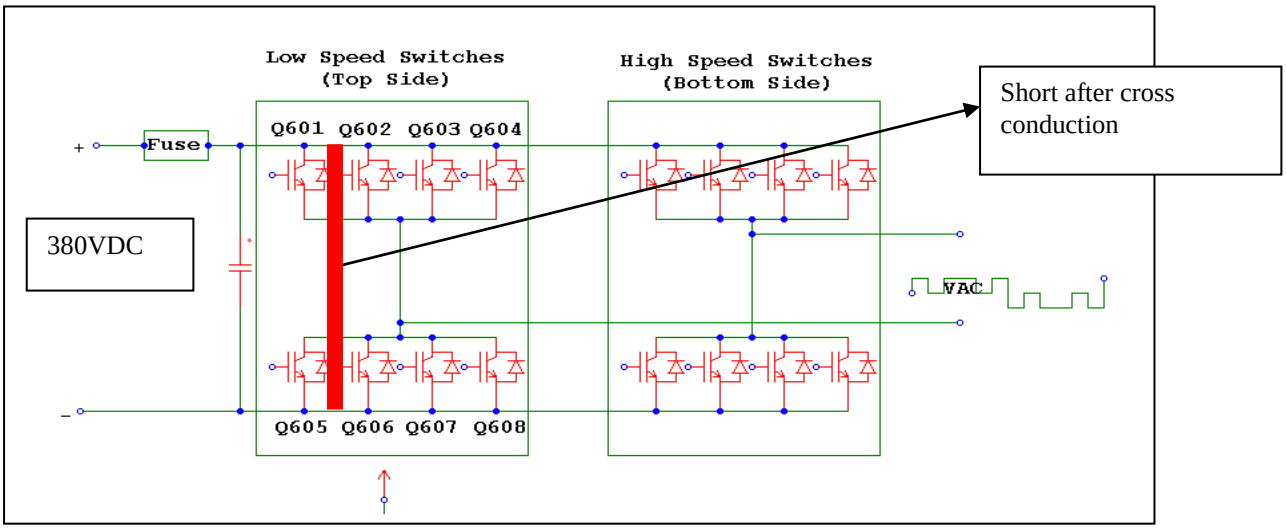

Figure 1 Bridge Assembly

Planning

Avionic Instruments has released this SIL to alert the fleet operators in possession of the in-service frequency converters of the potential for product improvement. This SIL contains information on a change to the fuse configuration for the frequency converters cited herein. The 30 amp fuse is being replaced with three 10 amp fuses. The modified converters will be identified as "MOD J". See Figure 2 for the before and after fuse configuration.

We are requesting that operators review their installation records and identify converters not identified as MOD J. Once identified, operators may return the frequency converters for the upgrade contained herein.

A modification plate will be added to the front panel of the converter, and the converter label will indicate MOD J Incorporated.

Material

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Delete from High Voltage type Chassis assemblies the sub assembly P/N 1-002-0113-0642 (FUSE BRACKET ASS'Y) and replace it with new assigned P/N 1-002-0113-1067 (new release...Rev-A).

Contacts

For further information, please contact Avionics Instruments LLC Repair Department/Customer Service Manager, Mr. Tom Conover by one of the following means:

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Fax: 732-382-4996

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Web: www.avionicinstruments.com

End result of executing product improvement

AFTER **BEFORE**

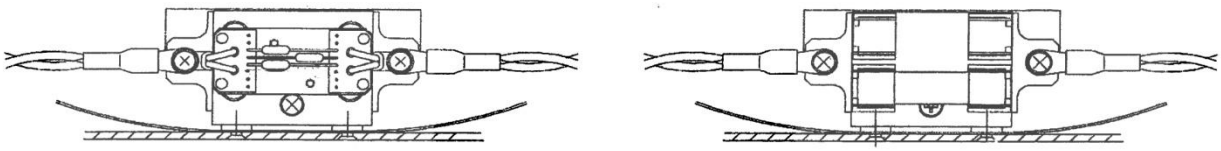

Figure 2
Fuse Configuration

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