

CIL
CRITICAL ITEMS LIST
FILE: CIL7/1

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
ELECTRICAL SIGNALS HARNESS IVEN 152 SV789152 2 (1)	2/1RB	ISZEMMS: ELECTRICAL OPEN IN WARNING TONE OR STATUS TONE LINE.	END EYEN; LACK OF CONTINUITY IN WARNING TONE OR STATUS TONE LINE.	A. DESIGN - THE FOLLOWING DESIGN CONSIDERATIONS HAVE BEEN INCORPORATED TO PREVENT AN OPEN IN THE WARNING TONE OR STATUS TONE LINE: THE APPLICABLE CABLE/CONNECTOR INTERFACES ARE STRAIN RELIEVED BY A MOLDED RUBBER STRAIN RELIEF BOOT TO REDUCE THE CHANCE OF WIRE FATIGUE DURING USE. THE CONNECTORS ARE BUNDLED WITHIN A MOVED COPPER STRAPPED SHEATH WHICH CAUSES THEM TO ACT TOGETHER AND SHARE ANY LOADING PLACED ON IT. THE MOVED WIREY SHEATH IS ASSEMBLED OVER THE SHIELDED CABLES TO PROVIDE PROTECTION FROM ABRASION AND IMPACT. THE CONDUCTORS ARE HARD POINTED WITHIN THE RING TO PREVENT THEIR CHAFING AGAINST THE METAL ADAPTER RING. G24 AND TEFLON COATED WIRE PROVIDES ELECTRICAL AND MECHANICAL PROPERTIES TO PREVENT BREAKAGE. WIRE CRIMPING PER SVHS4909 (GASOL IN NSFC-SPEC-Q-1A).
1029-1 14		CRUSE1 CABLE CHAFING AGAINST CONNECTOR SHEATH OR SHEATH, IN PROPER CONNECTION STRAIN RELIEF, FAULTY CONNECTION BETWEEN THE CONNECTOR AND THE LEAD WIRES.	RFE INTERFACE; NO AUDIBLE TONES WHEN ACTIVATED BY CNS. MISSION; NONE FOR SINGLE FAILURE. CREW WOULD NOT BE ALERTED TO SUBSEQUENT FAILURE AND COULD NOT PROPERLY RESPOND WITH CORRECTIVE ACTION. CREW/VEHICLE; NONE FOR SINGLE FAILURE, POSSIBLE LOSS OF CREWMAN WITH LOSS OF CCC, OXYGEN OR LOW VENT FLOW.	B. TEST - COMPONENT ACCEPTANCE TEST - THE IGT HARNESS IS SUBJECT TO ACCEPTANCE TESTING PRIOR TO FINAL ACCEPTANCE PER AT-EMU-102. THIS TESTING INCLUDES THE FOLLOWING TESTS WHICH ENSURE THERE ARE NO WORKMANSHIP PROBLEMS WHICH WOULD CAUSE AN OPEN CIRCUIT IN THE WARNING TONE OR STATUS TONE LINES. CONTINUITY TESTING OF EACH CONDUCTOR TO ENSURE THERE ARE NO OPEN CIRCUITS. EACH CONNECTOR/CABLE INTERFACE IS PULL TESTED (10 POUNDS) TO DETECT ANY WORKMANSHIP PROBLEMS WHICH COULD CAUSE AN OPEN CIRCUIT. PRA TEST - THE WARNING TONE AND STATUS TONE LINE ARE CHECKED DURING PLUS PRA TESTING PER SEMI-88-010, TEST 4.0 TO ENSURE THEY HAVE CONTINUITY TO THE DON. CERTIFICATION TEST - THE IVEN HAS COMPLETED THE STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENTS DURING EM/88. ENGINEERING CHANGE 42806-BZF-2 (ADDED CONNECTOR PULL TEST) HAS BEEN INCORPORATED AND CERTIFIED SINCE THIS CONFIGURATION HAS CERTIFIED.

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ELECTRICAL SIGNS HARNES ITEM 152 SV789152-1 411	2/3RD	3B2FN05; ELECTRICAL OPEN IN HARNES WIRE OR STATUS TONE LINE.		<p>C. INSPECTION - TO ENSURE THERE ARE NO WORKMANSHIP PROBLEMS WHICH WOULD CAUSE AN OPEN CIRCUIT IN THE HARNES CONDUCTORS, THE FOLLOWING INSPECTIONS ARE PERFORMED: CONTACT CRIMP SAMPLES ARE MADE PRIOR TO START OF CRIMPING AND AT THE CONCLUSION OF CRIMPING AND PULL TESTED TO ENSURE THE CRIMP TOOLING IS OPERATING PROPERLY AND THERE WILL NOT BE ANY HIGH RESISTANCE PROBLEMS AT THE CONTACTS. HARNES CABLES AND CONDUCTORS ARE VISUALLY INSPECTED PRIOR TO ASSEMBLY TO ENSURE THERE ARE NO DEFECT WHICH COULD CAUSE A OPEN DUE TO BREAKAGE. CONNECTOR MATING IS INSPECTED BEFORE AND AFTER POTTING TO ENSURE THERE IS NO CONDUCTOR DAMAGE AND THAT THE CONDUCTORS ARE STRAIN RELIEVED PROPERLY TO PREVENT CONDUCTOR BREAKAGE. IN-PROCESS ELECTRICAL CHECKOUT OF THE HARNES BEFORE AND AFTER POTTING AND HOLDING TO ENSURE THERE ARE NO OPEN CIRCUITS.</p> <p>B. FAILURE HISTORY - NONE FOR THIS FAILURE MODE. RELATED FAILURE: J-EMU-152-COIL 10-17-001 AN OPEN CIRCUIT IN THE HARNES WIRE COIL. LINE WAS FOUND DURING FUNCTIONAL TESTING. THE FAILURE WAS DETERMINED TO BE CAUSED BY THE PULLING AND TWISTING OF THE HARNES DURING NORMAL INSTALLATION ON THE PLSS. THIS HANDLING CAUSED THE WIRE TO BREAK. EC 42004-208 REVISED CABLE LATCHING AND IMPROVED CABLE FLEXIBILITY. CLASS 1 EC 42004-527-2 CREATED THE SV789152-2 HARNES CONFIGURATION BY ADDING A CONNECTOR PULL TEST REQUIREMENT TO THE ACCEPTANCE TEST REQUIREMENTS.</p> <p>E. CABLES TURNING - GROUND TURNING TESTED PER FEHL-9-001, TONES TEST.</p> <p>F. OPERATIONAL USE - CREW RESPONSE - PREVENT: TRAINING SHOULD, IF NO SUCCESS, CONSIDER TUNING EMI IF AVAILABLE. OTHERWISE EMI GO FOR EVA. RELY ON VISUAL MONITORING OF DISPLAYED MESSAGES. EVA: IF DETECTED DURING AIRLOCK DEPRESS, CONFIRM EVA. RELY ON VISUAL MONITORING OF DISPLAYED MESSAGES. TRAINING - STANDARD EMI TRAINING COVERS THIS FAILURE MODE. OPERATIONAL CONSIDERATIONS - REFERENCE LOSS/FAILURE PLIGHT PLUS: DEFINE EMI AS LOST IF CREW AND GROUND DETERMINE INSUFFICIENT CNS DATA AVAILABLE. EVA CHECKLIST AND FOR PROCEDURES VERIFY MODULAR INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA. REAL TIME DATA SYSTEM ALLOW GROUND MONITORING OF EMI SYSTEMS.</p>

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