

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
SUIT PRESSURE TRANSDUCER, ITEM 114 ----- SV767788-1/-2 (1)	2/1RB	114FM05 Electrical short. Contamination on the electrical connector, faulty leads.	END ITEM: Loss of sensor output. GFE INTERFACE: Increase in battery power consumption. The current is limited in the DCM DC/DC converter to 1.8 +/- 0.25 amps. Shutdown of the DC/DC converter. Loss of CWS, tones and DCM display. MISSION: None for single failure. Terminate EVA with loss of DCM display, CWS, and ability to monitor the operational integrity of the EMU. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of CCC, oxygen or low vent flow. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE:	A. Design - -1 Conrac and -2 Gulton: The wiper/coil assembly and wiring are sealed in a protective metal case and are protected from the environment by a 40 micron filter. Solder joints are encased in potting for additional strain relief. (The sensor supplier was changed from Conrac Corp., Systems West Division, Duarte CA, to Gulton Industries Inc., Costa Mesa, CA. in 1982 when Conrac discontinued manufacture of the transducer). B. Test - Component Acceptance Test (Vendor) - The suit sensor is subjected to random vibration testing (6.1g rms) to insure there are no workmanship or material problems that would cause shorting problems. The sensor is subjected to calibration testing at low and high temperature (32 degrees F to 120 degrees F) to insure there are no workmanship problems that would cause a short circuit between the sensor circuit and the case. The sensor is calibration checked during acceptance testing to insure there are no short circuits which would affect the sensor's accuracy. PDA Test - The sensor is calibration checked, as assembled on the shear plate, to insure there are no short circuits which affect the sensor's accuracy. Certification Testing - Certified for a useful life of 20 years (Ref. EMUM1-0084). C. Inspection - The sensor is visually inspected prior to case assembly to assure no lead damage exists and no contamination is present. The sensor is calibration checked at the assembly process to ensure there are no short circuits which would affect the sensor's accuracy. D. Failure History - None for this failure mode. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Transducer and DCM Gage Calibration Check. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing. F. Operational Use - Crew Response - PreEVA: Trouble shoot problem, if no success consider EMU 3 if available. EMU no-go for EVA. EVA: When loss of CWS tones and displays detected, terminate EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define an operational CWS as at least able to monitor a valid status list. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.

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114FM05

Minutes.

TIME REQUIRED:
Minutes.

REDUNDANCY
SCREENS:
A-PASS
B-FAIL
C-PASS

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-114 PRESSURE SUIT SENSOR
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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