

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		132AFM05		
PRESSURE TRANSDUCER FEEDWATER SUPPLY, ITEM 132A ----- SV767793-7 (1)	2/1R	External leakage, gas. Seal failure.	END ITEM: Suit gas leakage to ambient. GFE INTERFACE: Excessive consumption of the primary oxygen supply. The SOP is automatically activated during EVA if the suit pressure drops to 3.33 psid. MISSION: Terminate EVA. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP. TIME TO EFFECT /ACTIONS: Seconds. TIME AVAILABLE: Minutes. TIME REQUIRED: Immediate. REDUNDANCY SCREENS: A-PASS B-PASS C-PASS	A. Design - -5 Conrac and -7 Gulton: The external leak path for the primary pressure sensor is through a static radial O-seal molded from a fluorocarbon elastomer rubber. The seal groove configuration and rigidity of assembly provide squeeze under all tolerance and environmental conditions. B. Test - Component Acceptance Test - Conrac: The suit pressure sensor is subjected to acceptance testing per ATP 451329-64 prior to shipment by the assembly vendor. This testing including the following tests which insure there is no external leakage at the sensor port. a. Proof pressure testing to a pressure of 60 psig for one minute using fixture which simulates the sensor installation in the PLSS. b. Calibration check of sensor to 40 psig, using a fixture which simulates the sensor installation. Gulton: The suit pressure sensor is subjected to acceptance testing per ATP-3031-15202 prior to shipment by the assembly vendor. This testing includes the following tests which insure there is no external leak path at the sensor port. a. Proof pressure testing to a pressure of 60 psig for one minute using fixture which simulates the sensor installation in the PLSS. b. Calibration check of sensor to 40 psig, using a fixture which simulates the sensor installation. PDA Test - The suit pressure sensor undergoes proof, leakage and performance testing per SEMU-60-010 after installation on the PLSS. Certification Test - Certified for a useful life of 20 years (ref. EMUM1-0084). C. Inspection - The sensor port configuration is visually and dimensionally inspected to B/P requirements to insure there will not be any leakage paths. The O-seal is visually inspected for surface characteristics per SVHS3432, CL III to insure there are no defects that could cause a leak path. D. Failure History - None for this failure mode. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Pre-Flight Final SEMU Gas Structural and Leakage. None for EET processing. F. Operational Use - Crew Response - PreEVA: No response, single failure unlikely to be detectable by crew or ground. EVA: When CWS data confirms an accelerated primary O2 use rate, terminate EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define go/no go criteria related to EMU suit pressure integrity. Consider periodic vacuum O2 recharge to recover EMU
----- SV767793-8 (1)				

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operation. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-132 FEEDWATER SUPPLY PRESSURE SENSOR
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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