NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE TRANSDUCER, ITEM 205 SV778473-6 (1)	1/1	215FM03A: External gas leakage. CAUSE: Failure of seal.	END ITEM: Leakage of emergency O2 supply to ambient. SFE INTERFACE: Premature depletion of SOP. MISSION: Abort EVA. CREW/VEHICLE: Possible loss of crewman with excessive leakage.	A. Design - The external leak path is through a radial silicone "O" ring seal which has a back up ring (teflon) upstream, and also a metal to metal interface. The "O" ring seal design configuration dimensions and rigidness of assembly provide squeeze under all load and environmental conditions. B. Test - Component Acceptance Test - The pressure transducer is tested for external leakage per SVHS9185 Para. 3.2.2.2. Leakage shall not exceed 1.0 x 10-5 scc of Helium/sec., while pressurized to 7400 +/- 200 psig. PDA Test - The integrity of the item is verified by proof and leakage tests, plus a transducer check test. The item is proof pressure tested at 11,200 -11,900 psig GH2 for 5 minutes minimum, and then visually inspected for evidence of distortion, cracks, or other defects. Sequentially, the item is externally leak tested with a 2% GHe and 98% GH2 mixture at a pressure of 5800 - 6200 psig in chamber vacuum. Leakage must not exceed 5.55 x 10 -5 scc/sec GHe. 5.55 x 10-5 scc/sec GHe represents total end item (SOP) leakage. Certification Test - Successfully completed the external leakage requirement with an actual leak rate of 1.5 x 10-6 scc/sec He (spec. requirement is 5.5 x 10-5). This is recorded in TER3310 (10-15-82). The pressure transducer completed the 15 year structural vibration and shock certification requirement during 10/83. C. Inspection - The seal which is used when installing the pressure transducer into the SOP is 100% inspected for dimensional and surface finish requirements. Details, including the O-ring grooves and sealing surfaces, are 100% inspected per drawing dimensions and surface finish characteristics. D. Failure History - H-EMU-215-A002 (11-8-88) External gas leakage from SOP transducer due to torn O-seal. Revised assembly procedures to prohibit transducer

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	1/1	21SFN03A:		installation with O-ring left in housing bore.

E. Ground Turnaround -
Tested per FEMU-R-601, SOP Preflight Processing, External Leakage.

F. Operational Use -
Crew Response -
EVA: Since EVA termination should begin as soon as SOP is itowing, crew response is to abort the EVA. Training - Standard EMU training covers this failure mode.
Operational Considerations - Reference loss/ failure flight rules: define an EMU as lost for loss of operational SOP. EVA checklist and POP procedures verify hardware integrity and operational status prior to EVA. Real time Data System allows ground monitoring of EMU systems.