

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRIMARY OXYGEN PRESSURE SENSOR, ITEM 112 ----- SV778528-1/-2 (1)	2/2	Loss of output; fails to zero pressure. Open in the resistive coil, (on the 5v supply side) electrical leads or connector.	END ITEM: False indication of zero tank pressure. GFE INTERFACE: Erroneous CWS warning of high oxygen use rate from primary oxygen tanks. MISSION: Terminate EVA. Loss of use of one EMU. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Seconds. If EVA, return to the vehicle. If detected during the EMU checkout sequence, do not use EMU. TIME AVAILABLE: N/A TIME REQUIRED: N/A REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	A. Design - -1 Conrac and -2 Gulton: All electrical joints are coated with epoxy and insulated leadwires are used to provide wire strain relief and prevent an open circuit. The coil/wiper design has been developed to provide suitable operation for at least 50,000 full scale pressure cycles. B. Test - Component Acceptance Test (Vendor) - The sensor is subjected to random vibration testing (6.1 grms) to ensure there are no workmanship or material problems that would cause an open circuit. The sensor is subjected to calibration testing at high and low temperature (30 to 120 deg F) to insure there are no defects that thermal expansion/contraction would uncover. The sensor circuit continuity is measured to insure there are no open circuits. PDA Test - The sensor is calibration checked as assembled on the shear plate to ensure the output voltage is within specified limits. Certification Testing - Certified for a useful life of 25 years (Ref. EMUM-1434). C. Inspection - The sensor is visually inspected for workmanship and compliance to the drawings prior to case assembly. D. Failure History - None. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Transducer and DCM Gauge Calibration Check. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing. F. Operational Use - Crew Response - PreEVA: Use airlock panel O2 meter to approximate O2 tank pressure, continue with EVA prep. EVA: When CWS data confirms an accelerated primary O2 use rate, terminate EVA. If failure can be determined to be sensor, continue EVA. Periodically return to airlock to recharge primary O2 tanks. Training - Standard EMU training covers this mode. Operational Considerations - Flight rules require EVA termination when minimum primary consumables remain. 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-112 PRIMARY OXYGEN PRESSURE SENSOR
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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