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PRINT DATE: 08/09/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER

NUMBER: GO-AA-201000-04-000-X

SUBSYSTEM NAME:

REVISION : 1 89/08/09

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ SRU	<i>PRESSURE</i> CURRENT LOOP TRANSMITTER	504
■	NEWPORT ELECTRONICS	

- EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SOLID-STATE, TWO-WIRE, 4-20 MA. CURRENT LOOP TRANSMITTER.
0.00 MV.=4 MA., 30.00MV.=20 MA. NEWPORT ELECTRONICS MODEL NO. 504
- QUANTITY OF LIKE ITEMS: 2
TWO, ONE FOR EACH TANK MONITOR CIRCUIT.
- FUNCTION:
IN EACH TANK MONITOR CIRCUIT, THE TRANSMITTERS CONDITION AND TRANSMIT
THE TANK PRESSURE TRANSDUCER OUTPUT SIGNAL TO THE STATUS MONITOR
ASSEMBLY. TR1 IS USED IN TANK NO. 1 CIRCUIT, TR3 IS USED IN TANK NO. 2
CIRCUIT.

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SHUTTLE CRITICAL ITEMS LIST - ORBITER

NUMBER: GO-AA-201000-04-000-01

SUBSYSTEM: GALILEO RPM TANK MONITOR

REVISION# 1 89/08/25

ITEM NAME: ~~CURRENT LOOP~~ TRANSMITTER
~~CURRENT LOOP~~ TRANSMITTER

CRITICALITY OF THIS
FAILURE MODE: 1S

- FAILURE MODE:
NO OUTPUT FROM TRANSMITTER IN RESPONSE TO INPUT SIGNAL.

MISSION PHASE:
LS LANDING SAFING

- VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS STS-34
- CAUSE:
VIBRATION, MECHANICAL SHOCK, ELECTRICAL STRESS, THERMAL STRESS
- CRITICALITY 1/1 DURING INTACT ABORT ONLY? N

- REDUNDANCY SCREEN A) N/A
■ B) N/A
■ C) N/A

PASS/FAIL RATIONALE:

- A)
■ B)
■ C)

- FAILURE EFFECTS -

- (A) SUBSYSTEM:
LOSS OF TANK PRESSURE DATA, POSSIBLE UNDETECTED RUNAWAY TANK PRESSURE.
- (B) INTERFACING SUBSYSTEM(S):
POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.
- (C) MISSION:
POSSIBLE LOSS OF THE GALILEO/IUS PAYLOAD
- (D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE.

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- (E) FUNCTIONAL CRITICALITY EFFECTS:
 POSSIBLE UNDETECTED TANK RUNAWAY PRESSURE, TANK RUPTURE, POSSIBLE FIRE/
 EXPLOSION, POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE.

- DISPOSITION RATIONALE -

(A) DESIGN

TRANSMITTER ELECTRONICALLY CONVERTS AN INPUT OF 0 VDC TO 10 VDC TO A CORRESPONDING OUTPUT OF 4 TO 20 mA. THIS DEVICE IS LOOP POWERED, OPERATING OFF OF 9VDC TO 32 VDC.

(B) TEST

CALIBRATION LABORATORY EACH TRANSMITTER TO ITS REQUIREMENTS SPECIFIED ON G073-100181.

(C) INSPECTION

THE UNITS ARE INSPECTED FOR WEIGHT, WORKMANSHIP, FINISH, DIMENSIONS, CONSTRUCTION, CLEANINESS, IDENTIFICATION MARKING AND CERTIFIED MATERIALS AND PROCESS. ACCEPTANCE TEST PROCEDURE ARE APPROVED BY QUALITY ASSURANCE.

(D) FAILURE HISTORY

NO GENERIC FAILURES

(E) OPERATIONAL USE

CONTINGENCY ONLY. THE TRANSMITTER, LOCATED IN THE G073-100181 DRAWING, CONVERTS THE 10 VDC PRESSURE TRANSDUCER EXCITATION INTO A 10 mA LOOP SIGNAL. USAGE IS ONE TIME ONLY IF MISSION IS ABORTED WITH GALILEO ON BOARD. THIS DEVICE FOR SELF VERIFICATION AND IS NOT CRITICAL TO SYSTEM OPERATION. A SPARE ASSEMBLY WILL BE AVAILABLE AT THE ABORT SITE.

- APPROVALS -

RELIABILITY ENGINEERING: W. R. MARLOWE
 DESIGN ENGINEERING : L. COLEMAN
 QUALITY ENGINEERING : C. ROLLINS
 NASA RELIABILITY :
 NASA SUBSYSTEM MANAGER :
 NASA QUALITY ASSURANCE :

: *W.R. Marlowe*
 : *L. Coleman*
 : *C. Rollins*
 : *[Signature]*
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