

SAA09EL18-003
REV. C

B/L: 131.80
SYS: Ball/Bar Lights
- SLF

Critical Item: Fusible Disconnect Switch (2 Items Total)
Find Number: FS1
Criticality Category: 1 (Night Landing Only)

JUL 31 1992

SAA No:	09EL18-003	System/Area:	Ball/Bar Lights - SLF
NASA Part No:	None	PMN/Name:	U72-1338 Ball/Bar Lights
Mig/Part No:	I-T-E D322N	Drawing/Sheet No:	80K51820 8

Function: Provides Circuit Overload Protection for the Phase "A," "B," and "C" legs of the Ball/Bar Light System.

Critical Failure Mode/Failure Mode No: Premature Open of the Phase "B" leg/
09EL 18-003.039, 09EL18-003.040

Failure Cause: Heat/Faulty Mechanism/Corrosion

Failure Effect: Loss of power to the Ball Lights. Loss of ability to acquire and maintain the proper inner glideslope during Orbiter landing operations. Possible loss of life/vehicle.

ACCEPTANCE RATIONALE

Design:

<u>Rated</u>	<u>Estimated Operating</u>
0 to 240 volts	120 volts
60 amps	31 amps

- Switch is mounted in a rainproof NEMA 3R Enclosure which is located within an air conditioned structure.

Test:

Switches are certified in accordance with the requirements of National Electrical Manufacturers Association (NEMA) Standard KSI-1983 for type HD switches and Underwriters Laboratories Standard UL98, "Standard for Safety, Enclosed and Dead Front Switches."

Certification testing included the following with no malfunctions:

5050234AB
ATTACHMENT
SHEET 3 OF 11

WORKSHEET 5312-013
920724akPS0100

WESCOM

SAA09EL18-003
REV. C

JUL 31 1992

- Operational Testing:
50 make and break cycles at 850 amps
- Endurance Testing:
8,000 cycles with 84 amperes of current applied and
7,000 without current applied
- Dielectric Voltage Withstand Testing:
2 times max rated voltage plus 1,000 volts at a frequency of 60 Hz for 1 minute applied:
 - 1) Between live parts and the enclosure with the switch closed.
 - 2) Between terminals of opposite polarity with the switch closed,
and
 - 3) Between the line and load terminals with the switch open.

OMI I3134 requires verification of proper operation and equipment setup prior to each Shuttle launch and landing flow.

Inspection:

- Visual inspections for corrosion, contamination and/or physical damage are accomplished annually during performance of OMI I3134 system verification.

Failure History:

- The PRACA database was researched and no failure data was found on this component in the critical failure mode.
- The GIDEP failure data interchange system was researched and no failure data was found on this component in the critical failure mode.

Operational Use:

• **Correcting Action:**

There is no action which can be taken to mitigate the failure effect.

• **Timeframe:**

Since no correcting action is available, timeframe does not apply.

5050234AB
ATTACHMENT
SHEET 4 OF 11

WORKSHEET 5312-013
920724akPS0100