

SAA09FY121-001
B/L: 389.00
SYS: 15-TON
BRIDGE CRANE
VAB

Critical Item: Relay Contactor (1 Item)

JAN 23 1995

Find Number: D

Criticality Category: 2

SAA No: 09FY121-001

System/Area: 15-Ton Bridge Crane/
VAB - Low Bay Cell 7

NASA
Part No: None

PMN/ K60-0532/15-Ton Bridge
Name: Crane

Mfg/
Part No: ERG40-1V-1/ASEA Controls

Drawing/
Sheet No: 79K16769/1-9

Function: Provides 480V AC power to hoist motor in down mode

Critical Failure Mode/FM No: Fails Activated/09FY121-001.009

Failure Causes: Relay sticks/welded contacts (2 or 3)

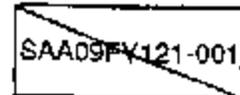
Failure Effect: Hoist will operate downward whenever start button is pressed or continue to operate at minimum speed when down button is released. Possible loss (damage) to Flight hardware if close proximity to an obstruction does not allow sufficient time for the operator to take correcting action. Failure is detectable when motion fails to stop when commanded. Time to effect: seconds.

Acceptance Rationale

Design:

Three pole reversing contactor specifications:

Coil:	Max.	Rated Nominal	Min.	Actual
Voltage:	132V AC	120V AC	102V AC	120V AC
Power:	Making 230 VA	Holding 30 VA	BW	
Current (nominal):	1.9 amps	.25 amps	Making 1.9 amps	Holding .25 amps
Max Coil Temp. Rise	85°C			
Contactor ambient operating temp.	-20° to +55°C			



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	Rated	Actual
Contacts:		
Voltage:	600V AC	480V AC
Current:	6 amps	2.3 amps
Material:	Silver Cadmium Oxide	
Type:	Double break Bridge	
Min. expected Contact life	10 ⁷ cycles	

Test:

- Pre-operational set up (attaching and positioning sling over the load) to support lifting operations in OMI B5303 Task 04 verifies proper operation of crane components and all functions.
- A full operational test of the crane is performed monthly (no load) in accordance with OMI Q6166.
- An operational check of the crane is performed under full rated load as part of the annual load test in accordance with OMI Q6166.
- OMRSD File VI requires annual performance of an operational test at rated load.

Inspection:

- Relay contactors are inspected for wear and pitting monthly in accordance with OMI Q6166.

Failure History:

- The PRACA database was queried and no failure data was retrieved against this component.
- The GIDEP failure data interchange system has been researched and no failures of this component were found.

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Operational Use:

o Correcting Action:

Use of stop button or E-stop is effective in mitigating these failures if there is sufficient time/distance for the operator to react.

o Timeframe: Seconds