

E01-SAA09FT06-030
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OCT 10 1990S040244
ATTACHMENT -
Page 15 of 68**CRITICAL ITEM:** Environmental Control Unit, transporter mounted**Find Number:** None**System:** Environmental Control Subsystem
for the Payload Canister, Set 2**Failure Category:** 1S**SAA No.:** 09FT06-030**NASA Part No.:** None**PMN/Name:** H70-1326**Mfr's Part No.:** KECO
Model F120-3**Drawing/
Sheet No.:** 79K22317**Function:** Provides filtered air with controlled temperature and humidity to the payload canister.**Critical Failure Mode:** Loss of smother mode capability (FMN 09FT06-030.002)**Cause:** Failure of relay KSR, B1K, K1, or K7; outside air damper A147083; or damper actuator A147080**Failure Effect:** Inability to initiate smother mode. Possible loss of life or payload.**ACCEPTANCE RATIONALE:****Design:****Relay KSR (Canister Smother):**Mfr.: AMF Potter and Brumfield P/N KUP14D15-24
24 volt DC, 3PDT

Insulating materials: molded plastic

Initial insulation resistance: 100 megohms minimum

Initial breakdown resistance: 1500 V rms, 60 Hz, between all elements
500 V rms, 60 Hz, between open contactsTime values: operate, 15 ms
release, 10 msExpected life: mechanical, 10 million operations
electrical, 100,000 operations minimum at rated loadTemperature range: -45 $\frac{1}{2}$ C to +70 $\frac{1}{2}$ C

Rating: Contacts, 10 amps at 120 volts AC, Coils, 1.2 watts

Relay B1K (Blower Starter):Mfr.: AMF Potter and Brumfield P/N KUP14A15-120V
120 volt AC, 3PDT

Insulating materials: molded plastic

Initial insulation resistance: 100 megohms minimum

Initial breakdown resistance: 1500 V, rms, 60 Hz, between all elements
500 V rms, 60 Hz, between open contactsTime values: operate, 15 ms
release, 10 msExpected life: mechanical, 10 million operations
electrical, 100,000 operations minimum at rated loadTemperature range: -45 $\frac{1}{2}$ C to +45 $\frac{1}{2}$ CRating: Contacts, 10 amps at 120 volts AC
Coils, 2.7 VA

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Relay K7 (Blower On Enable):

Mfr.: AMF Potter and Brumfield P/N KHU17A12

12 volt AC, 4PDT

Insulation: molded high-dielectric material

Initial breakdown voltage: 500 volts rms 60 Hz

Time values: pick-up, 13 ms

drop-out, 8 ms

Expected life: mechanical, 10 million operations

electrical, 100,000 operations minimum at rated load

Temperature range: -45½ C to +70½ C

Rating: Contacts, 3 amps at 120 volts AC

Coils, 2.7 VA

Relay K1 (Magnetic Motor Starter):

Mfr.: General Electric P/N CR306C022-10 H.P.

Rating: Contactor, 27 amps max, 480 to 575 AC volts

Outside Air Inlet Damper A147083:

Mfr.: Keystone Valve Corporation, Valve #100-945

12" wafer-type 150-pound butterfly valve

Damper Actuator A147080:

Mfr.: Keystone Valve Corporation

Model EPI-TORC F-777, size EPI-50

Torque output: 5000 lb-in

Full load current: 7.0 amps at 120 volts

Time for 90½ (full open to closed position): 12 seconds

Test:

File VI OMRSD requires verification of smother mode per OMI E3003 before each mission requiring ECS.

Inspection:

Quarterly, the components inside the electrical control cabinet are inspected to verify no loose or damaged connectors, obvious damage, frayed or broken wires, or damaged insulation.

Failure History:

There is no MDAC PRACA failure history in the critical mode. Data on Set 1 from 1981 to present; data on Set 2 from 1984 to present.

Operational Use:

Systems are secured and personnel are evacuated in accordance with OMI E5506 (vertical) and OMI L5050 (horizontal), Appendix 2.