

DIGITAL	FCO	CATEGORY [O]	PAGE 1 OF 9
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FIELD CHANGE ORDER	NUMBER: 9XXX-0010
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APPLICABILITY: This "O" FCO should be installed on all VAX 9000-3XX/4XX systems. This FCO incorporates ECO #7027516-TW002 and changes the part rev to "E2".

||This revision supersedes the previous revision dated November, 1991.

PROBLEM & SYMPTOM: The configuration of airflow, speed control and temp. sensors prohibits the second CPU cabinet from being powered up if the first UPC is not powered on.

SOLUTION: Replace the 17-02756-01 and 17-02757-01 cables with 17-03137-01 and 17-03138-01 which will re-configure the sensors in the first CPU cabinet to eliminate the airflow faults.

QUICK CHECK: Look for 17-03137-01 on the upper backplane J8.

PRE/COREQUISITE FCO: Installation of V14.2 console software which includes RIC software	MTTI HRS 1.5 Hrs/ 2 People
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TOOL/TEST EQUIPMENT:
N/A

FCO PARTS INFORMATION

FCO KIT NO.	DESCRIPTION OF CONTENTS	EQ KIT VARIATION APPLICABILITY
EQ-01629-01	17-03137-01 RIC 22 Airflow Sensor, rev F	N/A
	17-03138-01 RIC 12 Airflow Sensor, rev F	
FA-04964-01	FCO Document	

FCO CHARGING INFORMATION

WARRANTY/CONTRACT				NONWARRANTY/NONCONTRACT				
ON-SITE		OFF-SITE		ON-SITE		OFF-SITE		MATERIAL ONLY
TRAVEL/ INSTALL	EQ KIT	INSTALL	EQ KIT	TRAVEL/ INSTALL	EQ KIT	INSTALL	EQ KIT	ORDER-ADMIN, HANDLING PKG, SHIPPING & EQ KIT
DEC	DEC	DEC	DEC	N/A	N/A	N/A	N/A	N/A

APPROVALS

CSSE Charlie Kretz	DS HQ LOGISTICS Dick Joseph	DS PRODUCT SAFETY Robert Brister
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CSSE MANAGER Dino Genova	This document is published on multiple media including Customer Services and MDS	FCO Release Date 27 January 1992
MICROMEDIA Diane MacDonald	Microfiche Libraries. It is also available electronic- all via the SSD CD-ROM and TIMA. PARTS AVAILABILITY	FCO REVISION B
POPULATION 174		November, 1991

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NOTE: The Upper Blower Motor Replacement information has been added to the end of this installation procedure as Appendix A for your reference.

The Documentation Change information has been added to the end of this installation procedure as Appendix B for your reference.

Field Installation Synopsis

1. Installation of V14.2 console software is a prerequisite for this FCO.

***** WARNING *****

WARNING

When the new cables are installed RIC 12 & 22 MUST have the NEW RIC Firmware (V8.7) installed or the system will automatically power off. Likewise if the old cables are installed RIC 12 & 22 MUST have the OLD RIC firmware (V8.5) installed or the system will power off. All H7388 RIC spares that have V8.7 loaded in them will be labeled on the side with the revision of the firmware loaded.

NEVER use version EWBPM_8D.BIN (PEM) or EWBRC_86.BIN (RIC) Firmware, these were internal test code versions.

WARNING

***** WARNING *****

If you need to replace a RIC and it has the wrong firmware loaded don't panic. A spare RIC with either version of the firmware will work in all slots, EXCEPT RIC 12 and 22 for a VAX 9000 model 4XX system.

If the new RIC has the wrong version of the firmware put it in a slot that is not affected by the different versions. Then update

the RIC with the appropriate version of the RIC firmware for your system. Eventually all RICs should be updated to V8.7 firmware regardless what model VAX 9000 system they are installed in.

2. Perform Normal Operating System Shutdown Procedures

Issue the "SET POWER OFF" command at the Console ">>>" prompt to shut power off to the system logic. The RIC Firmware can only be loaded if power to the logic is off.

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3. Load the new PEM and RIC Firmware, the order of loading the firmware updates is CRITICAL or the system with power off, before you can complete the updates.

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LOAD/PEM/LOG [UCODE]EWBPM_90.BIN
INIT/POWER
LOAD/RIC=12/START=8000/LOG [UCODE]EWBRC_87.BIN (RIC 12 FIRST)
LOAD/RIC=22/START=8000/LOG [UCODE]EWBRC_87.BIN
```

4. The system will automatically trip the breaker for the first UPC in thirty seconds. If the system being upgraded is a TRI or QUAD configuration then Power Off the rest of the System with the key switch. Turn off the key switch regardless of what the system configuration is!

Disconnect and lockup the system from the AC power source(s).

5. From the rear of the CPA cabinet remove the upper Air Moving Device (AMD1). See the VAX 9000 Removal Replacement Procedures in the Maintenance Guide Volume I (sec 5.3.39). Remove the plenum(s) from CPU #0 and CPU #1 (if installed).

One of sensor cables goes through a small hole between the CPA cabinet frame and the upper air plenum. Remove the two screws on the right hand side of the upper air plenum. Disconnect the upper temperature sensor connector (T1), pull on the right hand side of the plenum so you can remove the sensor cable. Save the grommet from this hole, that protects the cable that is connected to sensor T1. Remove the two sensor cables from the cabinet, 17-02756-01 and 17-02757-01. Also if CPU #1 is not installed save the two jumpers that were installed on the sensor cables.

6. Install the new sensor cable 17-03138-01 to the lower backplane (RIC 12) J8. This cable connects to the three sensors that monitor the airflow/temperature for the Power Supplies. Use the grommet saved earlier on the cable that connects to sensor T1.

Cable Part Number: 17-03138-01 - (Replaces 17-02757-01)
Connector - TS1 - Sensor Inside Upper AMD1 Plenum
Connector - AF2 - Power Supply Plenum Left Side (Rear View)
Connector - SC2 - Power Supply Plenum Right Side (Rear View)

Re-install the two screws on the right hand side of the upper plenum. Re-install the upper Air Moving Device (AMD1) see the VAX 9000 Removal/Replacement Procedures (sec 5.3.39).

Install the new sensor cable 17-03137-01 to the upper backplane (RIC 22) J8. This cable connects to the five sensors that monitor the airflow/temperature for the CPU Planars.

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Cable Part Number: 17-03137-01 - (Replaces 17-02756-01)
Connector - TS2 - Sensor above CPU #1 Planar
Connector - AF3 - CPU #0 Plenum Left Side (Front View)
Connector - SC3 - CPU #0 Plenum Right Side (Front View)
Connector - AF4 - CPU #1 Plenum Right Side (Rear View)
- Use Jumper if CPU #1 is not installed
Connector - SC4 - CPU #1 Plenum Left Side (Rear View)
- Use Jumper if CPU #1 is not installed

Re-install the plenum(s) for CPU #0 and CPU #1 (if installed).

7. Unlock and re-connect the system to the AC power source(s).

Power on the system and verify the proper installation of the new sensor cables. Disconnect each of the sensors listed below one at a time and ensure that the proper error message is displayed on the console. The error message on the console should match the marking on the cable. Do not disconnect a sensor for more than thirty seconds or the Power Control Subsystem (PCS) will trip the AC breaker for the UPC.

Connector - AF2 - Power Supply Plenum Left Side (Rear View)
Connector - SC2 - Power Supply Plenum Right Side (Rear View)
Connector - TS2 - Sensor above CPU #1 Planar
Connector - SC4 - CPU #1 Plenum Left Side (Rear View)
Connector - AF4 - CPU #1 Plenum Right Side (Rear View)
- This sensor is difficult to access
Connector - SC3 - CPU #0 Plenum Right Side (Front View)
Connector - AF3 - CPU #0 Plenum Left Side (Front View)
- This sensor is difficult to access

8. Load the updated RIC firmware in the remaining RICs, you can do this manually or with the command procedure "PCS_UPDATE" in the tools directory. Remember that power to the system logic must be turned off to load the new RIC firmware.

OR

LOAD/RIC=11/START=8000/LOG [UCODE]EWBRC_87.BIN
 LOAD/RIC=21/START=8000/LOG [UCODE]EWBRC_87.BIN
 LOAD/RIC=31/START=8000/LOG [UCODE]EWBRC_87.BIN
 LOAD/RIC=41/START=8000/LOG [UCODE]EWBRC_87.BIN
 LOAD/RIC=51/START=8000/LOG [UCODE]EWBRC_87.BIN
 LOAD/RIC=13/START=8000/LOG [UCODE]EWBRC_87.BIN (TRI/QUADS ONLY)
 LOAD/RIC=23/START=8000/LOG [UCODE]EWBRC_87.BIN (TRI/QUADS ONLY)
 LOAD/RIC=52/START=8000/LOG [UCODE]EWBRC_87.BIN (TRI/QUADS ONLY)

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9. Report this activity on the LARS form in the "Fail Area/
 Module/FCO/Comments" column as follows: FCO 9XXX-0010

LARS

	USA	GIA	EUROPE	
Activity -				
(a)Contract and Warranty		W	U	Y
(b)IN-DEC Contract		K		
Hardware Segment Code		111		
Non Contract/Non Warranty	F		F	F
(b)RTD/Off-site Agreement		F		
Product Line		031	031	
DEC Option		94XX	94XX	94XX
Type of Call		M	M	M
Action Taken		D	D	I
Fail Area-Module-FCO-Comments		9XXX-0010	9XXX-0010	9XXX-0010
Material Used		EQ-01629-01	EQ-01629-01	EQ-01629-01

- (a) Warranty Optimum, Warranty Standard and Warranty Basic (on-site) Agreements; * Note material (only) free of charge for all customers.
- (b) Applies to IN-DEC Area Only
- (c) RTD=Return to Digital or Off-site Agreements; If Field Engineer On-site, use Activity Code "F".

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Appendix A

1 Upper Blower Motor (Model 400)

Table 1 lists the upper blower motor replacement information. The upper blower motor is inside the blower housing and is accessed from the rear of the cabinet.

Table_1: Upper Blower Motor FRU Information

Parameter	Specification
FRU part number	12-28381-01
FRU handling	Two people required
Tools required	Phillips screwdriver 11/32-inch_box_wrench

1.1 Blower Motor Removal

1. Refer to the power shutdown and disconnect procedure to shut down and lock the system from the AC power source.
2. Disconnect the blower motor Mate-N-Lok connector under the blower housing.
3. Release the three plastic cable clamps on the bottom of the blower housing and free the clamps of cables.
4. Using a Phillips screwdriver, remove the nine Phillips screws attaching the blower panel to the blower housing.
5. With two people supporting the blower panel, remove the panel. The panel has a bottom portion that extends into the blower housing, to which the blower motor is attached. The edges of the bottom portion slide on grooves that support the blower motor.

***** WARNING *****

*
* As the panel slides out, the bottom portion will slide *
* out of the supporting grooves freeing the blower motor *
* from the cabinet. Two people must be prepared to sup- *
* port the weight of the motor which is now free of the *
* cabinet. (motor weight is 48 lbs. or 21.8 kgs.) *

6. Place the motor and panel assembly onto a work surface.
7. Remove the blower motor connector from the bottom portion of the blower panel.
8. The blower motor is attached to the bottom portion of the blower panel by eight 11/32-inch screws. Using a 11/32-inch box wrench, remove the eight screws to separate the blower motor from the bottom portion of the panel.

1.2 Blower Motor Replacement

1. Refer to the power shutdown and disconnect procedure to shut down and lock the system from the AC power source.
2. Attach the blower motor to the bottom portion of the blower panel with eight 11/32-inch screws.
3. Attach the blower motor connector to the bottom portion of the blower panel.
4. Using two people, lift the blower panel with the blower motor attached, and insert the motor inside the blower housing. Slide the edges of the bottom portion of the blower panel into the grooves that support the blower panel and motor.
5. Using a Phillips screwdriver, attach the blower panel to the blower housing with nine Phillips screws.
6. Connect the blower motor Mate-N-Lok connector under the blower housing.
7. Route cables under the blower housing through the three plastic cable clamps on the bottom of the blower housing and close the clamps.

OCP CODES - RIC 12 Generated

Code	Fault	Location	FRU
OLD: 502	Temp RED zone T2	CPA CAB	T2/SC3/SC4/motor controller/AMD2/AMD3
NEW: 502	Temp RED zone T1	CPA CAB	T1/SC2/motor controller/AMD1
OLD: 512	Temp Open T2	CPA CAB	THERMISTOR T2
NEW: 512	Temp Open T1	CPA CAB	THERMISTOR T1
OLD: 522	Temp Short T2	CPA CAB	THERMISTOR T2
NEW: 522	Temp Short T1	CPA CAB	THERMISTOR T1
OLD: 612	Air flow 2, SC4	CPA CAB	SC4/AMD3
NEW: 612	Air flow 2, SC2	CPA CAB	SC2/AMD1
OLD: 622	Air flow 3, SC3	CPA CAB	SC3/AMD2
NEW: 622	Spare Air flow code	CPA CAB	RIC 12
OLD: 642	Air flow 1 and 2 (AF2 and SC4)	CPA CAB	RIC 12
NEW: 642	Air flow 1 and 2 (AF2 and SC2)	CPA CAB	SC2/motor controller/AMD1

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OCP CODES - RIC 22 Generated

Code	Fault	Location	FRU
OLD: 505	Temp red zone T1	CPA CAB	T1/SC2/motor controller/AMD1
NEW: 505	Temp red zone T2	CPA CAB	T2/SC3/SC4/motor controller/AMD2/AMD3
OLD: 515	Temp Open T1	CPA CAB	THERMISTOR T1
NEW: 515	Temp Open T2	CPA CAB	THERMISTOR T2
OLD: 525	Temp Short T1	CPA CAB	THERMISTOR T1
NEW: 525	Temp Short T2	CPA CAB	THERMISTOR T2
OLD: 605	Air flow 1, SC2	CPA CAB	SC2/AMD1
NEW: 605	Air flow 1, AF3	CPA CAB	AF3/AMD2
OLD: 615	Air flow 2, AF4	CPA CAB	AF4/AMD3
NEW: 615	Air flow 2, SC3	CPA CAB	SC3/AMD2
OLD: 625	Air flow 3, AF3	CPA CAB	AF3/AMD2
NEW: 625	Air flow 3, AF4	CPA CAB	AF4/AMD3

OLD: 635	Spare Air flow code	CPA CAB	RIC 22
NEW: 635	Air flow 4, SC4	CPA CAB	SC4/AMD3
OLD: 645	Air flow 1 and 2 (SC2 and AF4)	CPA CAB	RIC 22
NEW: 645	Air flow 1 and 2 (AF3 and SC3)	CPA CAB	SC3/motor controller/AMD2
ADD: 655	Air flow 3 and 4 (AF4 and SC4)	CPA CAB	SC4/motor controller/AMD3

OLD: 655-6F5	Spare Air flow code	CPA CAB	RIC 22
NEW: 665-6F5	Spare Air flow code	CPA CAB	RIC 22

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