



CCF/PPF/CHF URC2 PCB Upgrade 94A0571 Kit

Service Bulletin

Document Number

ALN151, 28 July 2010,
Rev. B , 17 September 2010

ADB Airfield Solutions

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**WARNING**

Read the instructions in their entirety before starting any maintenance activities.

Disconnect power to the CCR before attempting to make any electrical repairs.

Coordinate a power outage with air traffic personnel before turning off power to the airport lighting system.

Allow only qualified personnel to perform the following tasks.

Observe and follow the safety instructions in this document and all other related documentation.

Use electrostatic Precautions; use an ESD while handling the PCB to prevent damage.

Failure to follow these precautions will result in equipment damage or personnel injury.

1.0 CCF/CHF/PHF Firmware Upgrade Kit 94A0571/X

Purpose:

Description of how to convert the ADB ferroresonant core regulator to input side feedback wiring and update the firmware using ADB kit # 94A0571/X.

Models suitable for the upgrade:

4 - 30KW 6.6A ferroresonant core standalone and switchgear using the URC2 (44A6035/1) PCB.

Note: The firmware has not been approved for use in 20A output regulators but may be recommended under certain circumstances - consult ADB service.

CAUTION: After performing this upgrade, this board becomes a 44A7075/1 - IT CANNOT BE REPLACED by a 44A6035/1 PCB.

1.1 Tools and Materials Needed:

- PLCC chip extraction tool
- Small standard blade screwdriver
- Two crimp caps for 18 AWG wire or electrical tape
- Wire for jumper, 4" long, 18 AWG
- One tie-wrap
- Programmed chip 90A0083
- Laminated Wiring diagram number 43A3788
- Caution labels
- New assembly label for PCB
- ESD kit for handling the PCB

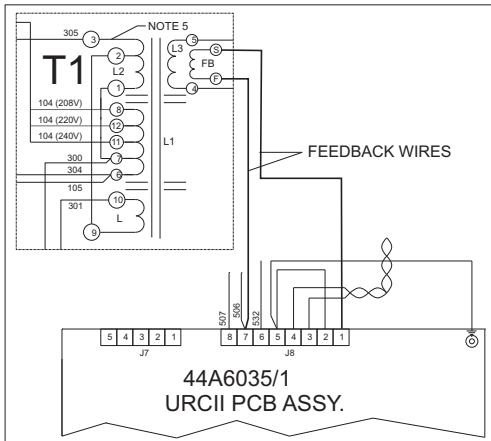
Table 1.1. Parts Supplied

QTY	ADB p/n	Description
1	38A0274/2	Programmed chip 90A0083x firmware with Label - yellow - 1/2" x 1/2" with: 83X
1	61A0476	Chip Extractor
1	ALN151	Service Bulletin
1	43A3788	Laminated Wiring diagram number 43A3788
1	63A0058/3	Wire tie - small
1	89A0293	Wire jumper - Yellow, 18 AWG, stranded, 4" long, 0.375" strip both ends
2	70A0778	Wire cap 18-22AWG, crimp
1	42A0620	Label Yellow - 3/8" x 1-7/8" with: CAUTION: INPUT SIDE FEEDBACK
1	42A0621	Label - yellow - 1" x 2-1/2" with: CAUTION: INPUT SIDE FEEDBACK
1	42A0622	Label - white "Assy 44A7075/1"
Kit size	94A0571/1	Qty's as shown above
	94A0571/10	parts for 10 CCRs but only one puller/one bulletin
	94A0571/25	parts for 25 CCRs but two pullers, two bulletins

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CHF/PHF Sequence of conversion:

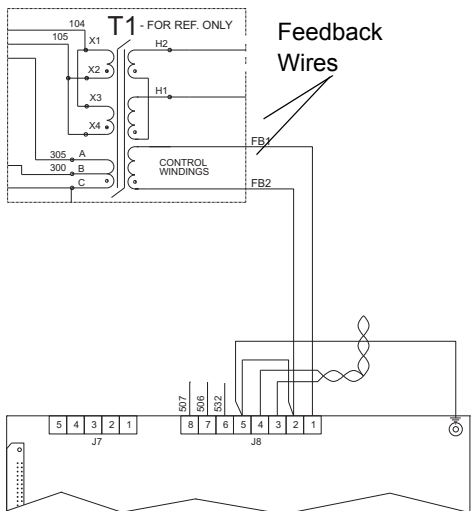
1.2 CHF/PHF Sequence of conversion:



PREVIOUS CHF FEEDBACK WINDING CONNECTIONS

1. Turn regulator manual control to 'off'.
2. Turn off power to regulator.
3. Locate J8 on the URC2 44A6035/1 main PCB.
4. Remove and cap or tape off the original feedback wires at J8-1 and J8-7.
5. Neatly tie-wrap original feedback wires into the wire harness.
6. Install the 4" jumper wire between J8-1 and J8-8. J8-8 will now have two wires connected.
7. If previous feedback modifications have been performed, confirm that there is a wire between J8-2 and J8-5. Confirm there is no wire between J8-2 and J8-7. See Figure 1.1. Verify that the wiring matches diagram 43A3788.
8. Remove chip U9 using chip removal tool and a slight rocking motion. Save chip.
9. Replace U9 with new programmed chip (38A0274/2) carefully observing chip direction by noting pin 1 or the beveled edge. Do not press too hard when installing the new chip but ensure chip is firmly seated in the socket.
10. Clean surfaces prior to applying labels.
11. Place assembly sticker over silkscreen on the PCB showing ASSY #44A7075/1". See Figure 1.1.
12. See Figure 1.1. Place large feedback wiring change sticker on white panels near PCB J8 connector which states "Caution: Input side feedback". Place small feedback wiring change sticker on the URC PCB below J8 connector which states "Caution: Input side feedback".

1.3 CCF/PPF Sequence of conversion:

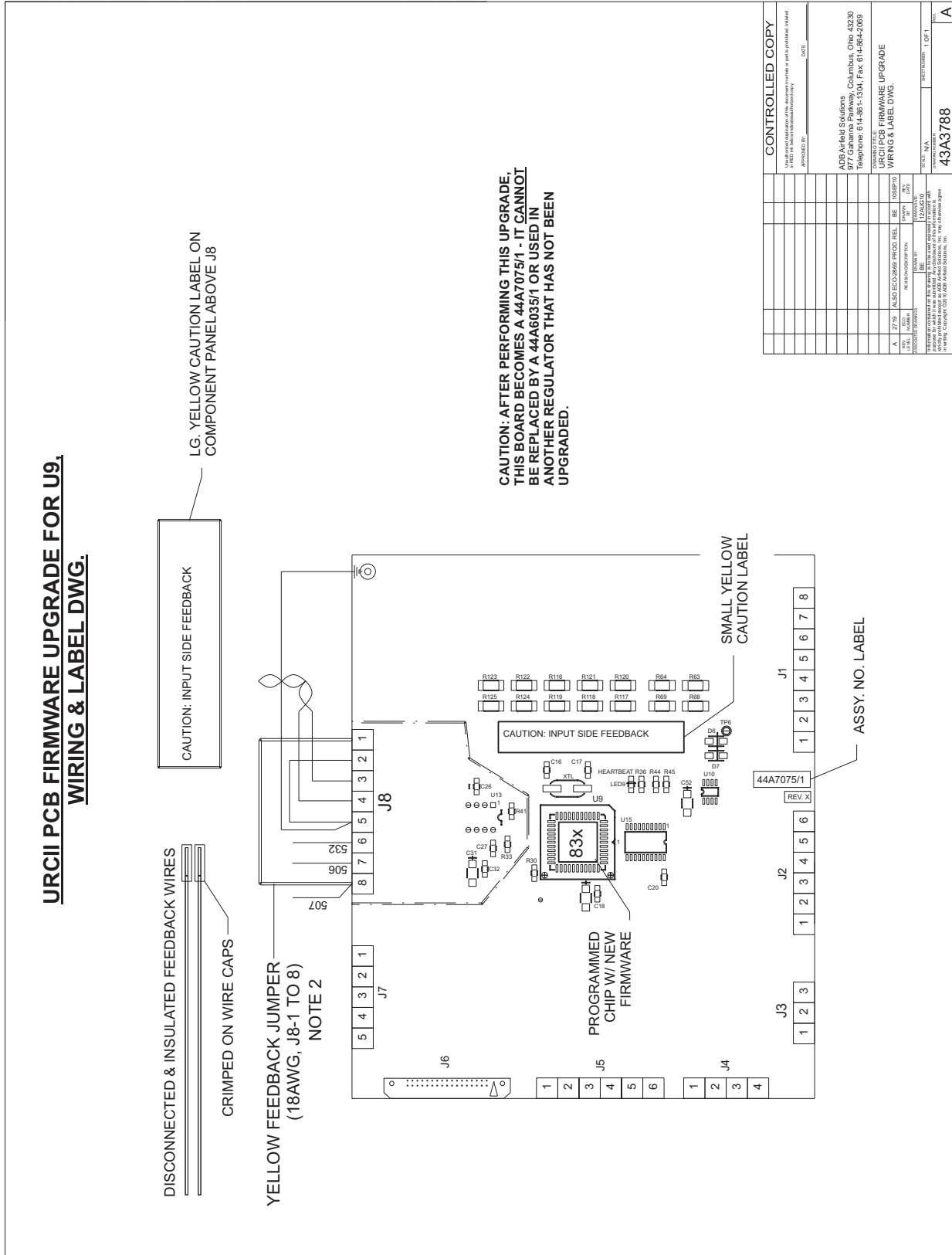


PREVIOUS CCF/PPF FEEDBACK WINDING CONNECTIONS

1. Turn regulator manual control to 'off'.
2. Turn off power to regulator.
3. Locate J8 on the URC2 44A6035/1 main PCB.
4. Remove and cap or tape off the original feedback wires at J8-1 and J8-2. Neatly tie-wrap original feedback wires into the wire harness.
5. Install the 4" jumper wire between J8-1 and J8-8. J8-8 will now have two wires connected.
6. If previous feedback modifications have been performed, confirm that there is a wire between J8-2 and J8-5. Confirm there is no wire between J8-2 and J8-7. Verify that the wiring matches diagram 43A3788.
7. Remove chip U9 using chip removal tool and a slight rocking motion. Save chip.
8. Replace U9 with new programmed chip (38A0274/2) carefully observing chip direction by noting pin 1 or the beveled edge. Do not press too hard when installing the new chip but ensure chip is firmly seated in the socket.
9. Place assembly sticker over silkscreen on the PCB showing ASSY #44A7075/1". See Figure 1.1.
10. See Figure 1.1. Place large feedback wiring change sticker on white panels near PCB J8 connector which states "Caution: Input side feedback". Place small feedback wiring change sticker on the URC PCB below J8 connector which states "Caution: Input side feedback".

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Figure 1.1. 43A3788 - CCF Feedback Winding Connections



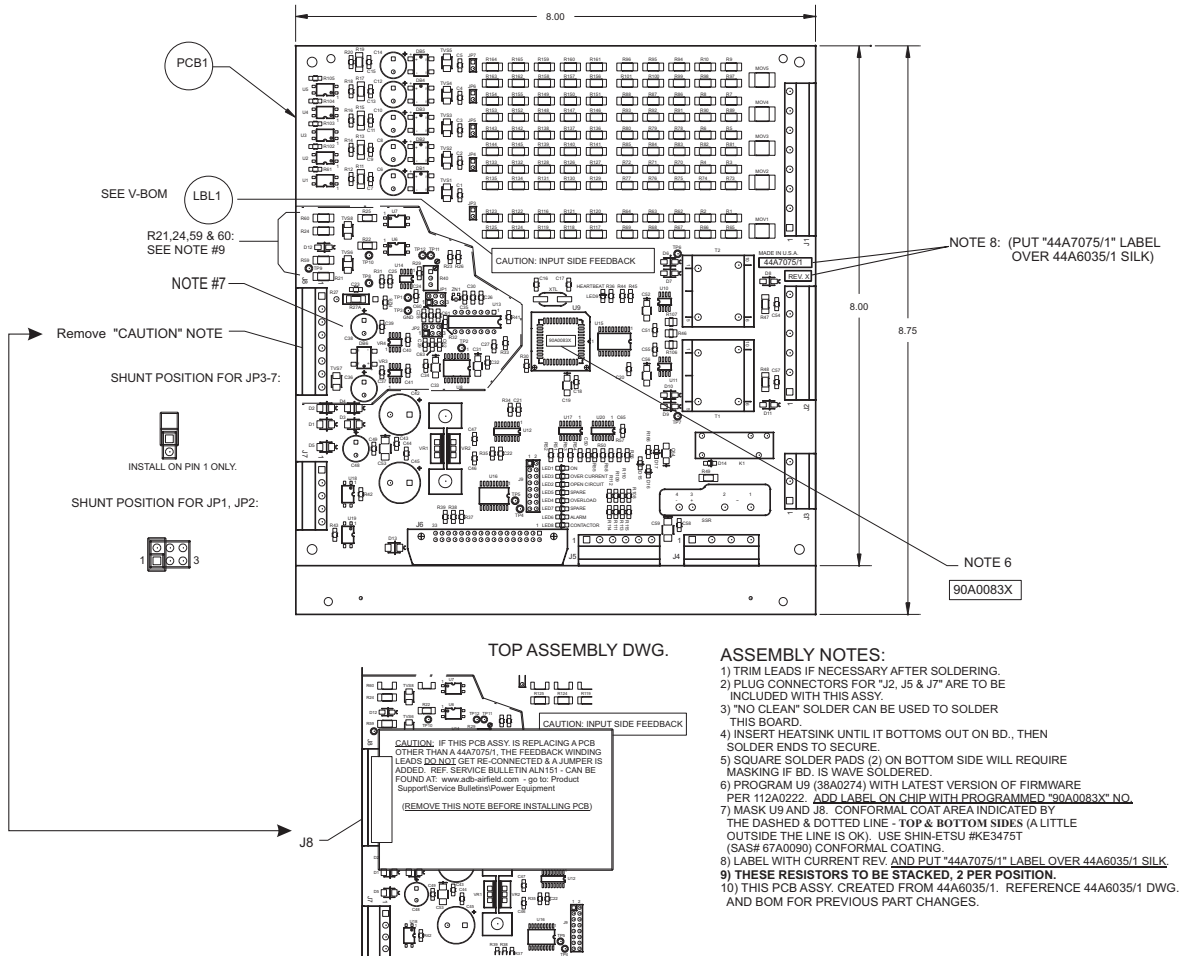
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DRAWN BY: J. J. WILSON CHECKED BY: J. J. WILSON TITLE: CCF/CHF/PHF FIRMWARE UPGRADE WIRING & LABEL DWG	
SCALE: N/A	REVISION: 1 OF 1
PART NO: 43A3788 QUANTITY: 1	

1 - CCF/CHF/PHF
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CCF/PPF Sequence of conversion:

Figure 1.2. 44A7075/1 diagram



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1.3.1 Test checkout:

1. Turn regulator manual control to 'off'.
2. Remove input power from the regulator.
3. Remove the field load and short the regulator output.
4. Restore input power to the regulator.
5. Turn regulator manual control to the lowest brightness setting and verifying output current on each step.
6. Exercise start-up several times by switching the manual control 'off' and 'on' and check that no error LEDs on the URC-II PCB are on or that the regulator does not shut down.
7. Cycle the regulator through all the current steps. Verify the output current is correct and tune if necessary per the CCR instruction manual.
8. Remove input power and reconnect the field load.
9. Repeat steps 4 through 6 with the field load connected.
10. Attach laminated copy of 43A3788 to the regulator's factory wiring diagram.

1.4 Troubleshooting:

Symptom	Task
Overcurrent or open circuit shutdown on start-up	Check modified wiring.
URC2 (44A7075/1) PCB does not power up, contactor does not energize	<ol style="list-style-type: none"> 1. Check U1 is properly installed, 2. Change to another chip, 3. Check nearby wiring was not disturbed.

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Troubleshooting:

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