

INSTRUCTION MANUAL



KEPCO An ISO 9001 Company.

**BOP 1KW-GL
RETROFIT
KIT 219-0573**

BOP 1KW-GL FIRMWARE RETROFIT KIT

1. DESCRIPTION

Kepeco KIT 219-0573 contains the PROM used to upgrade the firmware for BOP 1KW-GL Series power supplies. The upgraded firmware ensures that multiple units reliably start up within 10 seconds.

2. APPLICABILITY

This KIT applies to the following models

- Model BOP 10-100GL: All Revs
- Model BOP 20-50GL All Revs
- Model BOP 50-20GL All Revs

3. INSTALLATION INSTRUCTIONS

3.1 MATERIAL REQUIRED (See Table 1.)

TABLE 1. MATERIAL REQUIRED

MATERIAL	LOCATION	QUANTITY
PROM, Kepco P/N 250-0862; replaces U5 on Distribution Board A6	Provided in this Kit	1
• ESD (Electrostatic Discharge) wrist strap (Kepco P/N 114-0080)	Provided in this Kit	1
• IC Extractor (Kepco P/N 114-0079)	Provided in this Kit	1
Instruction Manual Kepco P/N 228-1812	Provided in this Kit	1
Phillips Screw Driver	Not Supplied	N/A

3.2 DISASSEMBLY PROCEDURE

1. Turn power off, disconnect the unit from source power and remove line cord.
2. Remove two mounting ears from the chassis by removing three screws from each.
3. Remove top cover of unit by removing 14 screws as follows: two at top of the front panel, four at each side, (one towards the rear, three at the bottom) and four at the top of the rear panel.
4. Disconnect ribbon cable attached to Distribution board A6 (see Figure 1) going to Front End Control board A4A3 connector J1.
5. Disconnect ribbon cable attached to Distribution board A6 going to Digital board A1J2.
6. Refer to Figure 2 and disconnect one 4-pin connector (J12), one 6-pin connector (J15), and one 5-pin connector (J14) wired with twisted pairs from Distribution board A6. Pull on the twisted pair where it enters the connector.

CAUTION: Failure to pull the fan connector straight back can damage the connector.

7. Remove fan connector (J10, Figure 2) from Distribution board A6 by pulling connector straight back

CAUTION: Removing the outer screws first can result in damage to the front panel.

8. At the bottom of the chassis, first remove the two inner screws, then the two outer screws securing front panel to chassis and separate front panel and Distribution board A6 from the chassis.
9. Carefully pull the front panel straight back from the chassis to disengage the circuit breaker pins and separate the front panel from the chassis

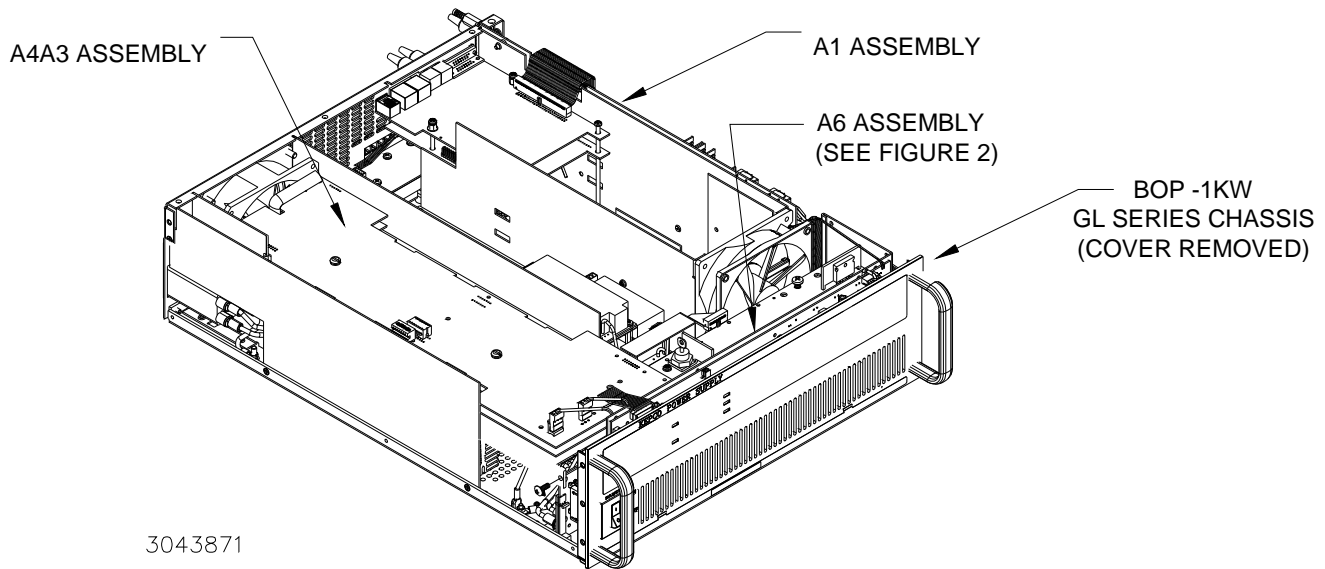
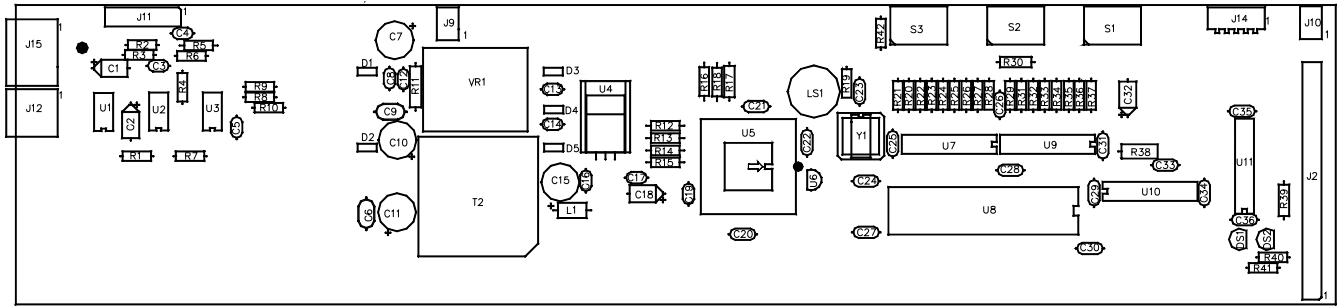


FIGURE 1. ASSEMBLIES A1, A4A3 AND A6 LOCATIONS

3.3 DISTRIBUTION BOARD A6 PROM REPLACEMENT (SEE FIGURE 2)

1. Remove seven SEM screws, securing the Distribution board A6 to the front panel. Carefully separate the Distribution board A6 from the front panel, pulling straight out so as not to bend the LED's (D1 through D5) which are aligned with the corresponding cutouts in the front panel
2. The PROM on the Distribution board A6 is now accessible for replacement.
3. Place Distribution board A6 on an ESD mat (if an ESD mat is not available, place the Distribution board on the top cover) and locate PROM U5 (see Figure 2).



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**CAUTION: ELECTROSTATIC SENSITIVE (ESDS) ASSEMBLY,
USE APPROPRIATE PRECAUTION PROCEDURE**

FIGURE 2. DISTRIBUTION BOARD A6 COMPONENT LOCATION

CAUTION: FAILURE TO USE THE ESD WRIST STRAP MAY DAMAGE THE PROM!

4. Use the peel and stick area of the wrist strap to connect the wrist strap to an ESD mat (or to the top cover if an ESD mat is not available). Place the wrist strap on your arm as indicated by the instructions for the wrist strap.
5. Touch the IC tube to the ESD mat or top cover. Open one end of the IC tube.
6. Pry out the PROM U5 using an IC extractor. Insert the hook, first into one slot and then the other, and gently pry out the PROM. Place the PROM in the tube and close the tube.
7. Open the other end of the IC tube and remove the replacement PROM U5 from the tube.
8. Insert the PROM into the U5 socket, insuring the dot on the chip is oriented as shown in Figure 2.
9. Reclose the IC tube. Remove wrist strap and disconnect it from the BOP.

3.4 A4A3 FRONT END CONTROL BOARD, COMPONENTS R9, C49 REPLACEMENT

1. On Front End Control board A4A3, locate resistor R9 (see Figure 3).
2. Replace resistor R9 with the replacement R9 supplied in this kit.
3. On Front End Control board A4A3, locate capacitor C49 (see Figure 3).
4. Replace resistor C49 with the replacement C49 supplied in this kit.

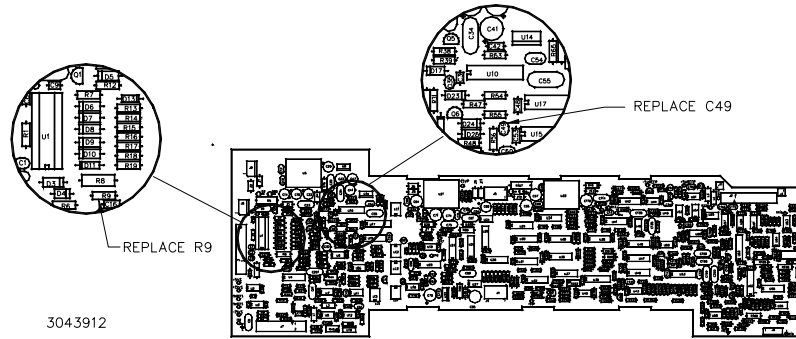


FIGURE 3. FRONT END CONTROL BOARD, A4A3, COMPONENT LOCATIONS

3.5 REASSEMBLY

1. Carefully line up the Distribution board LED's with the corresponding cutouts in the front panel, starting with D1, D2 and D3. Apply light pressure and rotate and adjust the alignment as needed to get LED's D4 and D5 inserted in the corresponding cutouts of the front panel.
2. Secure Distribution board A6 to the front panel using two SEM screws, then inspect to verify that all five LEDs are properly inserted into the front panel cutouts. Look between Distribution board A6 and the front panel to verify the LEDs are not bent. Once the LEDs are verified to be properly inserted in the front panel, secure Distribution board A6 to the front panel using the remaining five SEM screws,
3. Carefully line up circuit breaker pins with corresponding connectors on front panel and carefully mate front panel and chassis. It may be necessary to press the PCB onto the circuit breaker.

CAUTION: Installing the inner screws first can result in damage to the front panel.

4. Attach front panel with Distribution board A6 to the chassis first using two outer screws at the bottom of the chassis, then two inner screws.
5. Connect one 4-pin, one 6-pin and one 5-pin connector attached to twisted pairs to connectors J12, J15 and J14, respectively on Distribution board A6 (see Figure 2); holding the wires, line up the pins on an angle, then push until straight and press into place.
6. Attach the fan connector (J10, Figure 2) by inserting the connector straight into the mating socket.
7. Connect ribbon cable from Distribution board A6 to Digital board connector A1J2.
8. Connect ribbon cable from A4A3 module to Distribution board A6 connector J11.
9. If Circuit breaker does not have a Printed Circuit Board, connect the four wires to the circuit breaker in accordance with the tags on the wires.
10. Attach the cover to the chassis using 14 screws.
11. Attach the two mounting ears to the chassis using three screws for each.
12. Install the power cord, connect the unit to source power, turn on power supply and proceed to Initialization, PAR. 4

4. INITIALIZATION

Not required.

5. INSTRUCTION MANUAL CHANGES

None.