INSTRUCTION MANUAL

KEPCO An ISO 9001 Company.

BHK-MG FIRWARE UPGRADE KIT

BHK-MG FIRMWARE
UPGRADE KIT 219-0531

1. DESCRIPTION

Kepco Kit 219-0531 for BHK-MG full rack and half rack power supplies upgraded the Firmware to Version 9.01. This upgrade provides the following enhancements: 1) Improves the dwell time accuracy when running LIST programs and increases the allowable dwell time to 655 seconds per step, 2) improves non-volatile storage of data to protect against corruption of data due to electrical surges (e.g., power line lightning strike). Full rack models with this upgrade provide separate SAVE/RECALL storage locations dedicated to high and low ranges.

2. APPLICABILITY

This firmware upgrade kit is only applicable to the models/revisions listed in Table 1.

TABLE 1. APPLICABILITY

Full Rack (200W) Model	Rev	Half Rack (40W) Model	Rev
BHK 300-0.6MG	Rev 4 and above	BHK 300-130MG	All
BHK 500-0.4MG	Rev 15 and above	BHK 500-80MG	All
BHK 1000-0.2MG	Rev 14 and above	BHK 1000-40MG	All
BHK 1000-0.2MG-26069	Rev 14 and above	BHK 2000-20MG	All
BHK 2000-0.1MG	Rev 13 and above		

3. INSTALLATION OF COMPONENTS

3.1 MATERIAL REQUIRED (SEE TABLE 2.)

TABLE 2. MATERIAL REQUIRED

MATERIAL	KEPCO PART NUMBER	LOCATION	QUANTITY
• IC, PROM A1U41	250-0684	Provided in this Kit	1
• IC, MICROPROCESSOR A1U42	250-0625	Provided in this Kit	1
• ESD (Electrostatic Discharge) wrist strap	114-0080	Provided in this Kit	1
• IC Extractor	114-0079	Provided in this Kit	1
• Phillips Screw Driver	N/A	Not Supplied	N/A

228-1641

3.2 DISASSEMBLY PROCEDURE

1. Turn power off, disconnect the unit from source power and remove line cord.

2. For full rack models. remove the top cover from the unit by loosening and removing twelve screws (four on each side and four on top), securing the cover to the chassis.

3. For half rack models, remove the top cover from the unit by loosening and removing eleven screws (four on each side and three on top), securing the cover to the chassis

3.3 PROM U41 REPLACEMENT PROCEDURE (SEE FIGURE 1)

1. Locate PROM, U41 on Digital board A1 (see Figure 1).

2. Take the wrist strap from kit and use the peel and stick area to connect the wrist strap to the chassis of the BHK-MG. Place the wrist strap on your arm as indicated by the instructions for the wrist strap.

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

3. Touch the IC tube to the chassis of the BHK-MG. Open one end.

4. Pry out the PROM U41 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.

5. Open the other end of the IC tube and remove the replacement PROM from the tube.

6. Insert the PROM into the socket, ensuring the dot is oriented as shown in Figure 1 for U41.

7. Reclose the IC tube. Remove wrist strap and disconnect it from the BHK-MG chassis.

PCB ASS'Y A1
SEE DETAIL A

PCB ASS'Y A1
SEE DETAIL A

BHK−MG HALF
RACK(COVER REMOVED)

BHK−MG FULL RACK
(COVER REMOVED)

U42

U41
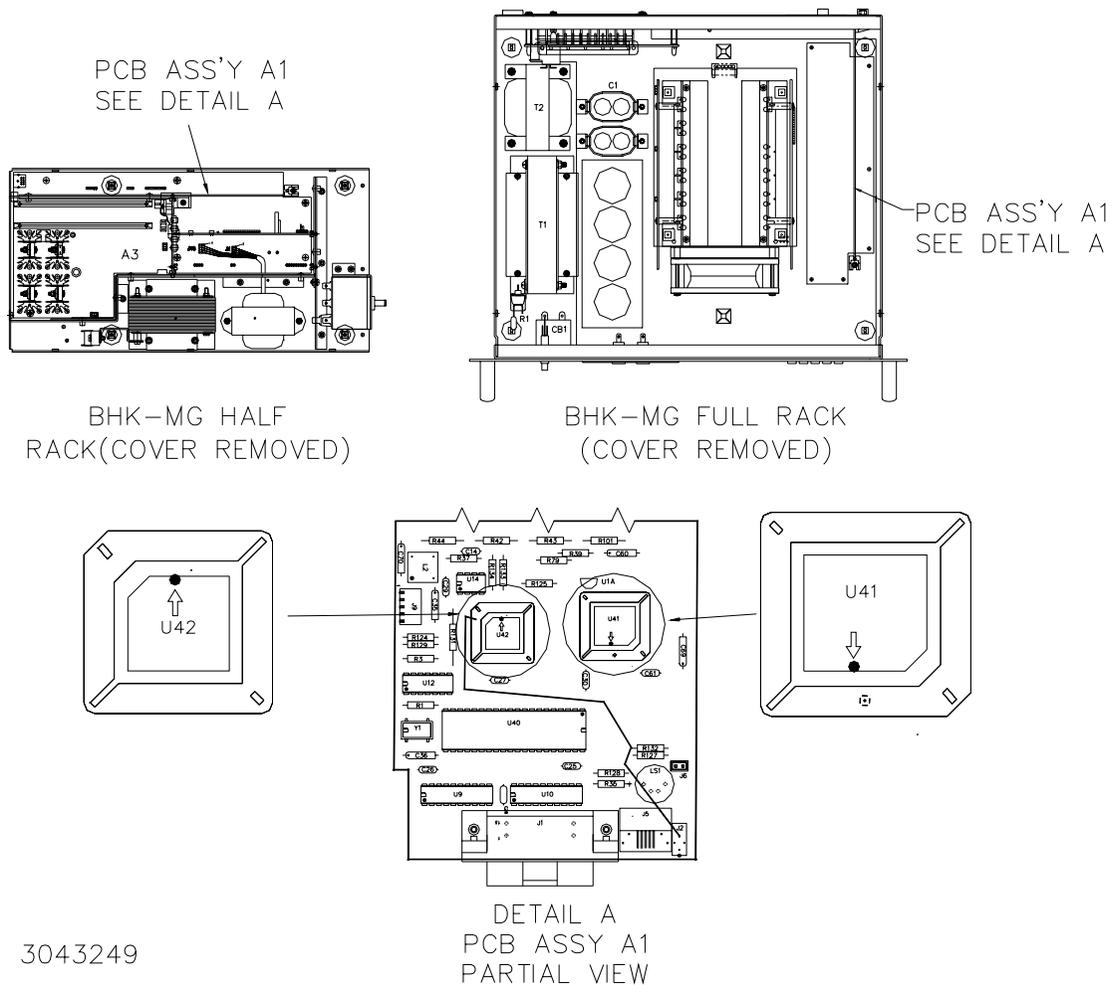
3043249

DETAIL A
PCB ASSY A1
PARTIAL VIEW

FIGURE 1.   DIGITAL BOARD A1, PROM U41 AND U42 LOCATION

3.4 MICROPROCESSOR U42 REPLACEMENT PROCEDURE (SEE FIGURE 1)

1.   Locate Microprocessor, U42 on Digital board A1 (see Figure 1).

2.   Take the wrist strap from kit and use the peel and stick area to connect the wrist strap to the chassis of the BHK-MG. Place the wrist strap on your arm as indicated by the instructions for the wrist strap.

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

3.   Touch the IC tube to the chassis of the BHK-MG. Open one end.

4.   Pry out the Microprocessor U42 using an IC extractor. Insert the hook, first into one slot and then the other, and gently pry out the Microprocessor. Place the Microprocessor in the tube and close the tube.

5.   Open the other end of the IC tube and remove the replacement Microprocessor from the tube.

6.   Insert the Microprocessor into the socket, ensuring the dot is oriented as shown in Figure 1 for U42.

7. Reclose the IC tube. Remove wrist strap and disconnect it from the BHK-MG chassis.

3.5 FINAL REASSEMBLY

1. Install top cover using 12 (full rack) or 11 (half rack) screws removed during disassembly.

2. Mark new model revision identifier as follows: add -26868 to indicate the Firmware upgrade was accomplished.

4. INITIALIZATION AND CALIBRATION

1. Restore power to the unit and turn the unit on.

 NOTE: For a nominal fee Kepco will preconfigure the components for a particular serial number. These preconfigured kits are designated 2190531-n where n is the complete serial number that has been preconfigured. If you have installed components from a preconfigured kit, the following steps are not required.

2. After the unit has initialized, the display shows SELECT PS TYPE, the bottom line shows a model number. Use left arrow key to select necxt model. When proper model is shown for example BHK 300-0.6MG, depress ENTER key

3. Use one of the two digital interfaces (GPIB or RS 232) to send the following SCPI commands:
       syst:pass:cen <PASSWORD> where <PASSWORD> is the calibration password.
       diag:ser n where n is the complete serial number of the unit from the rear panel.

4. Refer to the appropriate technical manual for either the half rack or full rack BHK-MG and calibrate the unit.