INSTRUCTION SHEET

KEPCO An ISO 9001 Company.

CABLE KIT 219-0436

RS 232 ADAPTER KIT
KIT NO. 219-0436

I. DESCRIPTION.

This kit is used to connect the RS 232 port of a Kepco power supply to a computer using a 9-pin DB9 type connector. The kit contains one 1-meter long RJ45 (male) to RJ45 (male) patch cord for ABC and BHK-MG models, and one 1-meter long RJ11 (male) to RJ45 (male) patch cord for BOP models, two loopback test connectors (one for ABC and BHK-MG and one for BOP models) and two RJ45 to DB9 adapters (one with male pins and one with female pins). Both adapters have a female RJ45 connector that accommodates one end of either patch cord. Table 1 lists the items supplied in this kit.

TABLE 1. EQUIPMENT SUPPLIED

Item	Quantity	Purpose	Kepco Part Number
RJ45 Patch Cord	1	Connects to Kepco BHK-MG or ABC power supply RS 232 port and either DB9 adapter supplied.	118-1115 (L-COM TRD855-10)
RJ11-RJ45 Patch Cord	1	Connects to Kepco BOP power supply RS 232 port and either DB9 adapter supplied.	118-1164
RJ45 to DB9 Adapter (Female pins)	1	Connects to either Patch Cord (supplied) and external controller using DB9 connector (female).	142-0506 (L-COM RA098F)
RJ45 to DB9 Adapter (Male pins)	1	Connects to either Patch Cord (supplied) and external controller using DB9 connector (male).	142-0487 (L-COM RA098M)
Loop Back Test Connector	2	Allows testing of RS 232 communication and aids in troubleshooting RS 232 communication problems.	195-0110 (fABC, BHK-MG only) 195-0111 (BOP only)
Instruction Sheet	1	Provides assembly instructions	228-1487

II. ADAPTER ASSEMBLY

The RJ45 to DB9 adapters provided are not fully assembled because there are many different connection possibilities. They must be must be assembled before they can be used. Figure 1 shows the connections for a typical application using the adapter with female pins (P/N 142-0506) to connect to a standard IBM PC computer. Refer to Table 2 for RJ45 pin functions to wire non-standard configurations.

1. Remove the metal connector from the plastic housing.
2. Snap in pins connected to the wires as defined in Table 2 into pins 5, 3 and 2 of the DB9 connector.
3. Fold the unused wires out of the way and snap the connector into the plastic housing
4. After the adapter is assembled, plug the RJ11-RJ45 patch cord into the BOP power supply RS 232 port, or plug the RJ45 patch cord into the ABC or BHK-MG power supply RS 232 port.
5. Plug the RJ45 end of the patch cord into the assembled adapter, then plug the DB9 connector of the adapter into the external controller and secure with the thumbscrews on the plastic housing.

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TABLE 2. RJ45 TO DB9 ADAPTER WIRE FUNCTIONS

Signal Name	Use Wire Color		DB9 Pin	Purpose
	for BOP	for ABC or BHK-MG		
RETURN	Green	White	5	Return for pins 2 and 3.
TXDATA	Brown	Red	3	Carries data from the controller to the Kepco power supply.
RXDATA	Yellow	Black	2	Carries data from the Kepco power supply to the controller.

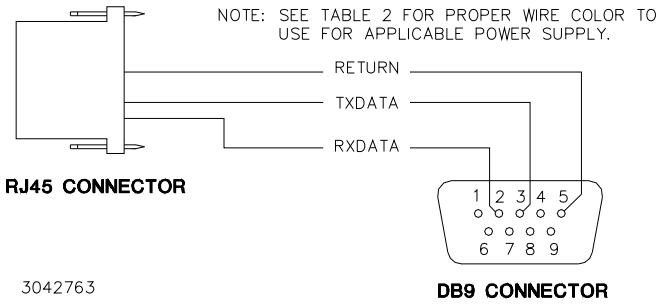

FIGURE 1. RJ45 TO DB9 ADAPTER WIRING

III. ISOLATING RS 232 COMMUNICATION PROBLEMS

A Loop Back test can be run from the power supply front panel to aid in isolating RS 232 communication problems. The unit is designed to pass the test only with the Loop Back test connector (see Table 1) installed.

1. With the power supply in local mode, run the loop back test with the Loop Back Test connector NOT installed and verify the test results in FAILED. If the test results in PASSED, the power supply is defective and requires repair.

2. Install the proper loop back test connector (either P/N 195-0110 for ABC and BHK-MG or P/N 195-0111 for BOP) into RS 232 port and rerun the test. If the test results in PASSED, the power supply is operating properly. If the test results in FAILED, the unit requires repair.

3. To check the connection between power supply RS 232 port and computer, disconnect the DB9 adapter between the RJ45 patch cord and the computer. Install a short wire jumper (wire not supplied) between pins 2 and 3 of the DB9 connector portion of the DB9 adapter. Plug the RJ45 patch cord into the DB9 adapter and rerun the test. If the test results in FAILED, RJ45 patch cord is defective. If the test results in PASSED, remove jumper from DB9 adapter and reconnect DB 9 adapter between RJ45 patch cord and computer.

4. Verify the power supply is set to baud rate of 9600. Then, configure any RS-232 communication program (such as Hyperterminal or Procom) to: baud rate to 9600, parity to off and bits per character to 8. Run the loop back test while monitoring the RS 232 data. The communication program should show the following data: KEPCO,ABC10-10,a12345,123 representing Manufacturer, Model number, Serial number and Firmware version.

   If data is not correct, unplug RJ45 patch cord from DB9 adapter, and insert loopback test connector into DB9 adapter. Using the communications program send data to power supply and verify that data is returned to computer. If data is not returned, computer is not functioning properly.

   If data is returned to computer, remove loopback test connector from DB9 adapter and reconnect RJ45 patch cord to DB9 adapter. Use a null modem between DB9 adapter and the computer for proper RS 232 communication.

5. When the data is correctly displayed, send *IDN? to the unit and use the communication program to verify that the power supply responds with the same data as for step 5. If no data is shown, check the communication setup and verify the program is transmitting the line feed character.