

# Instructions for Replacement of an IQ Data Plus II EPROM

I.L. 17359

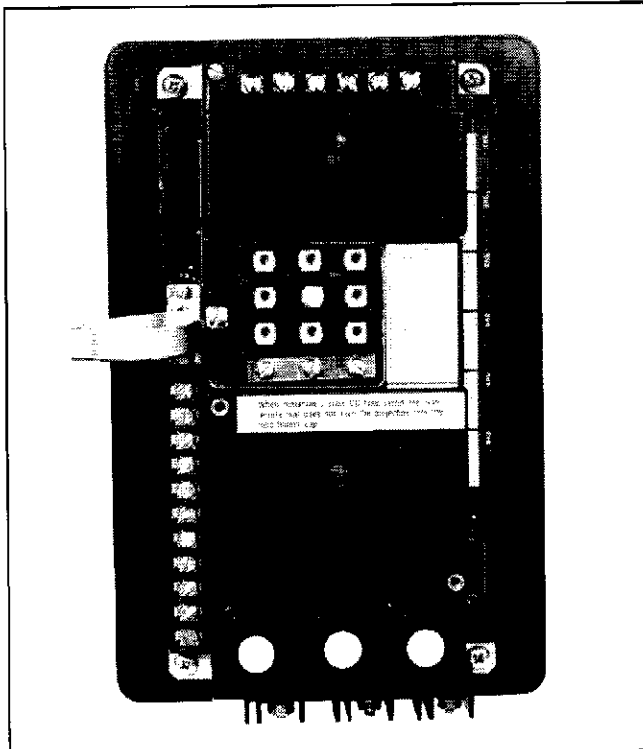


Fig. 1 Rear View of IQ Data Plus II Assembly

## PROCEDURE

1. Remove AC power at the main disconnect or isolation switch of the line being monitored. If the switch is located at a distance from the IQ DATA PLUS II, lock it out to guard against personnel accidentally turning it on.

**WARNING: Failure to perform steps 1 and 2 can result in serious or even fatal injury and/or equipment damage.**

2. Verify that all "foreign" power sources wired to the IQ DATA PLUS II are de-energized. These may be present on the alarm, trip, SYNC pulse, or Watt-hour pulse initiator contacts.
3. Before disconnecting any wires from the unit, make sure they are individually identified to assure that reconnection will be correctly performed. Make a sketch to help with the task of terminal and wire

identification. Also, record the settings of all dip switches on the installation record sheet in the manual (TD 17271, Figure 4.5, page 21).

4. If an optional ribbon cable connects with the communications port at connector P5, carefully unplug it. Note that the connectors may be screwed together. Also, remove all external connections to the communications device.
5. If the unit has its power module remotely located, carefully unplug the optional extension cable from connector P3 on the IQ DATA PLUS II's chassis, **not** the power module (See Figure 1).
6. Loosen each screw terminal or nut where there is a wire connection. Remove the associated wire.
7. Remove the six mounting screws holding the unit against the door or panel. These are accessed from the rear of the IQ DATA PLUS II.

**CAUTION: Be prepared to support the IQ DATA PLUS II from the front side once most of the screws are loosened or removed. Without such support, the unit could fall off, and the panel could be damaged.**

8. Carefully lay these screws aside for later use.
9. Take IQ DATA PLUS II to a non-carpeted room which is relatively static-free. The IQ DATA PLUS II circuit board contains several static sensitive components including the EPROM. When working with the circuit board, be sure to discharge any static charge by touching a metal object before handling the IQ DATA PLUS II. Avoid making contact with circuit board components as much as possible. Leave the new EPROM in anti-static packaging until ready for its installation into the board.
10. If a power module is mounted on the rear of the unit, disconnect its ribbon cable from the nine-pin connector P3 on the IQ DATA PLUS II circuit board.
11. Remove the four screws which hold the rear cover in place. These are located on each corner of the unit (See Figure 1).
12. Gently remove rear cover from unit. Note that the seven-pin connector must be removed from the eight-pin jumper P6 as the rear cover is being removed (See Figure 2).
13. Grasp the board by the upper corners and pull upward evenly on the two corners to remove the

board from the case. Be careful to pull directly upward to keep from bending the board-to-board stab connector.

14. Remove the four screws, washers, and spacers from the corners of the bottom circuit board (See Figure 3).
15. Place a hand across the rear of the unit and slowly turn the unit upside down allowing the board to rest on your hand. Remove the four-pin lead connecting the board to the membrane switch faceplate from jumper P7 on the circuit board (See Figure 4).
16. Place board on table oriented so that the displays are on the right and the row of LEDs is on the farthest side of the board (See Figure 5).
17. Locate the only component on the board which is socketed. This is the EPROM which should have a printed label on it. It is marked U12 on the circuit board.
18. Place a small straight-blade screwdriver under the end of the EPROM. Twist slightly to begin lifting the EPROM from the socket. Then place the screwdriver under the opposite end and twist slightly. Continue this procedure alternating between the ends until the EPROM is free from the socket. Be careful not to bend the pins or break the socket by applying too much pressure.
19. Remove the old EPROM from the socket. Remove the new EPROM from its anti-static foam.
20. Carefully place the new EPROM on the socket. Make sure that the notch or mark at the top of the

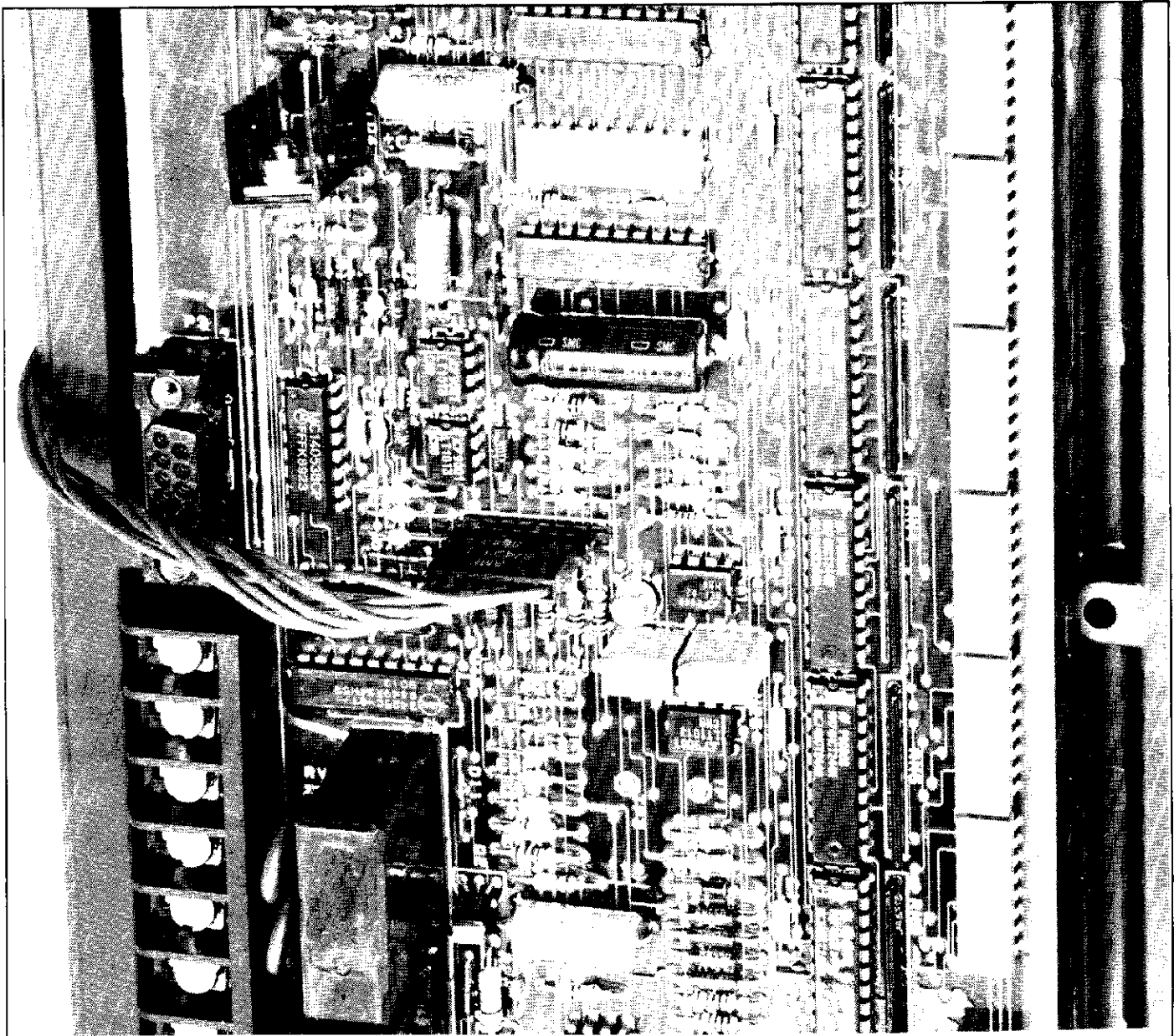


Fig. 2 Connection of Jumper P6 to Rear Board

EPROM is aligned with the notch marked on the circuit board. The writing on the EPROM and the U12 designator on the board should both be in the same orientation (See Figure 5).

21. Align the pins of the EPROM with the holes in the socket. It may be necessary to bend one or more pins slightly to align with the holes.

**CAUTION: These pins are very fragile; if they must be bent for alignment, use small needle-nose pliers and only bend slightly.**

22. When all pins are properly aligned, gently and evenly press the EPROM into the socket until it is firmly seated against the socket.
23. Verify that no pins were bent or missed their holes when the EPROM was inserted. If pins were bent

beyond repair, do not use this device. Return the EPROM for replacement.

24. Hold the board with the EPROM so that the display is aligned with the window of the front case. Reconnect the four-pin connector from the faceplate to jumper P7 on the circuit board being sure that the ribbon cable is not twisted (See Figure 4).
25. Carefully replace the bottom circuit board in the case making sure that the ribbon cable is not pinched between the board and the case, and that the LEDs are aligned properly with their holes.
26. Replace the four spacers, washers and screws in the corners of the circuit board. Do not over-tighten screws (See Figure 3).

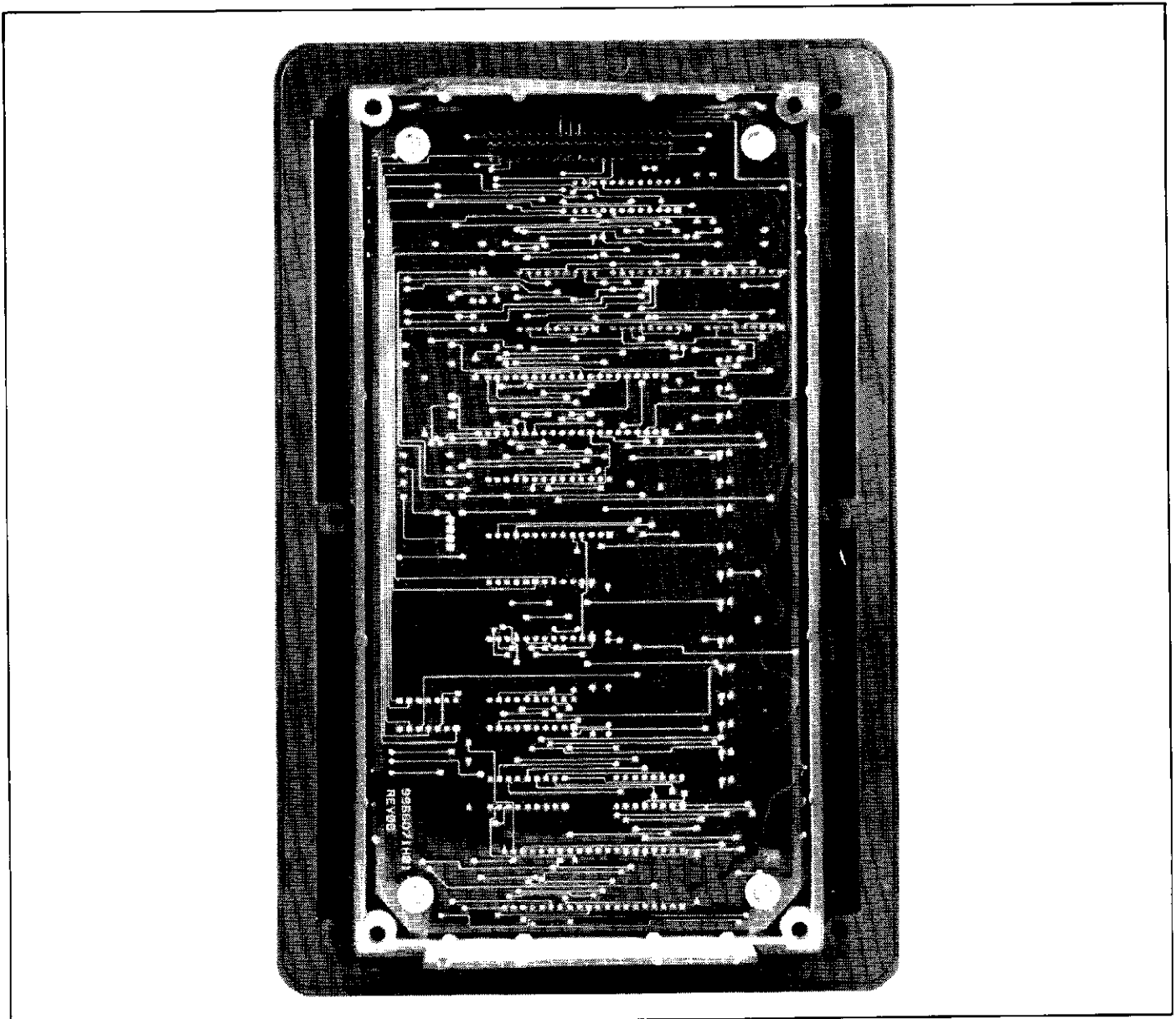


Fig. 3 IQ Data Plus II with Cover and Rear Board Removed

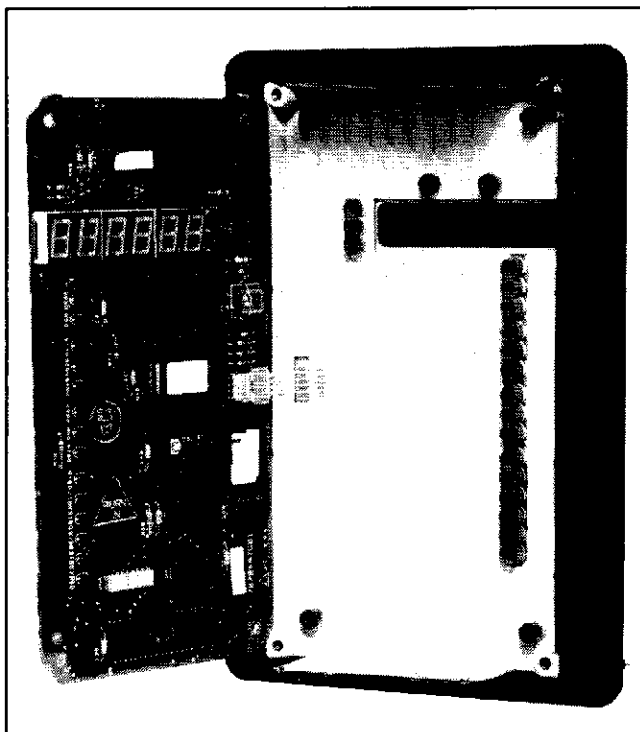


Fig. 4 Connection from Faceplate to Front Board

27. Align the 40-pin board-to-board connector with the holes in the other circuit board. Press the upper corners of the top board evenly toward the front case until the top board is seated on the edge of the front cover.
28. Connect the seven-pin connector from the rear cover assembly to the eight-pin jumper P6 on the circuit board. Make sure that position 1 of the connector is connected to the pin nearest the pin 1 mark (notch) on the circuit board. Note that pin 8, the last pin on the right side of the jumper, is left exposed (See Figure 2).
29. Place rear cover on the back of the IQ DATA PLUS II being careful not to pull the seven-pin connector loose from the board.
30. Replace the four screws in the corners of the rear cover. Be sure not to over-tighten screws (See Figure 1).
31. If a power module is mounted on the rear of the IQ DATA PLUS II, reconnect its nine-pin connector to port P3 and secure with locking screws.
32. Replace the IQ DATA PLUS II in the door or panel and secure with six mounting screws.

33. Using the sketch made in step 3, reconnect each wire at the correct terminal. Be sure each terminal is firmly tightened.
34. Verify that the dip switch settings have not been accidentally changed during this procedure by comparing each dip switch to the installation record sheet completed in step 3 (TD 17271, Figure 4.5, page 21).

**NOTE: See enclosed correction notice for revised switch settings for SW3 and modify dip switch settings if necessary.**

35. If the unit has the power module remotely located, reconnect the optional extension cable to the nine-pin power module connector P3 on the board and secure with locking screws.
36. If the unit has an optional communications module, reconnect the nine-pin connector to the communications port P5 on the circuit board and secure with locking screws. Also, reconnect the communications device to any external wires which were removed in step 4.
37. Restore AC power and verify that the operator panel functions, after an initial 2-second delay, are as follows:
  - The  $I_A$  AMPS RMS LED illuminates
  - The display window shows the actual phase A amperes
38. If there is no display or a problem with the displayed values, remove AC power and consult the troubleshooting procedures in the manual (TD 17271, Section 7, pages 32-35).

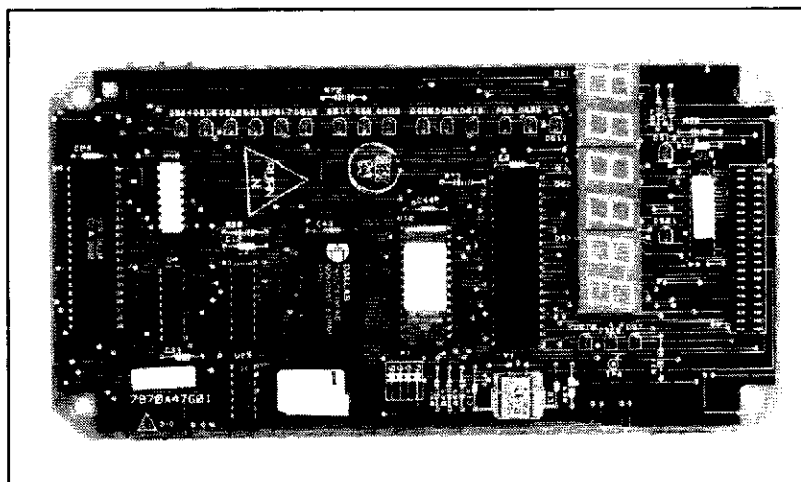


Fig. 5 IQ Data Plus II Front Board