



03-013B
2 May, 2007

FIRMWARE REPLACEMENT IN E SERIES ANALYZER

I. PURPOSE:

To replace the firmware in an E series analyzer with a new version of firmware. This note provides instructions on how to replace the Disk On Chip (DOC) in the analyzer. The new DOC will have a new version of firmware loaded on it. This only applies to the E series analyzer, the A & NON A series analyzers do not have DOC's they have PROMS. The DOC's & PROMS look the same & essentially have the same functionality but are very different from each other & are not interchangeable.

II. TOOLS:

#2 Phillips screw driver
Chip extractor or small flat tip screw driver.

III. PARTS:

KIT000XXX DOC with new firmware loaded into it.

IV. PROCEDURE:

1. From the front panel of the analyzer, push the TST> button until the RANGE selection comes up. write down the range of the analyzer & then push the TST> button again. Write down this TST value & continue through all of the TST values until you have returned to the RANGE selection again.
2. Turn the analyzer off, remove the power cable from the rear panel and remove the cover from the analyzer. Lower the rear panel to gain access to the CPU card on the motherboard on the rear panel.
3. Locate the Disk On Chip (DOC), on the CPU card.
4. The DOC is in socket U12 & is a 32 pin DIP. It will look just like the one that you got with this service note. This chip is going to have a sticker on it that has the model number (M300E, M400E, etc) either typed or written on it & the date that it was programmed.
5. Notice what direction the DOC is pointed in the socket (it has a cutout in one end of the chip), and remove the DOC from the socket and put it into the foam that the new one is in for safe keeping.
6. Insert the new DOC into the socket, noting the direction of the cutout on the chip
7. Verify that all the legs of the DOC are seated firmly into the socket on the CPU card.
8. Turn the analyzer on & once the machine boots up, clear the warning messages that you get. push the TST> button until you get to RANGE again.
9. Go through the TST> button all the way through the menu & verify that you have all of the same TST values as you did before you replaced the DOC. If they are not all there contact the technical service department at API-customerservice@teledyne.com. When you contact the customer service department have the model number of the machine (M200E, M300E, M400E, etc) & the serial number of the analyzer.

FIRMWARE REPLACEMENT IN E SERIES ANALYZER

03-013 Rev B

Page 1 of 2

10. If all of the TST values are there, go into section 6 of the instruction manual & perform the "ANALOG I/O CALIBRATION". This calibration is required and you will continue to get the warning on the front panel of the analyzer until this calibration is done.
11. If you are running a 4-20 ma converter on your machine & have this current output, you are going to have to calibrate this as well to your data logger or PLC or what ever type of recording device you have. This is also done in the "ANALOG I/O CONFIGURATION" menu.
12. One note about this calibration is that you have to do the AIN calibration before you do the AOUT calibration.
13. Once you have the analyzer up & running properly, send the old DOC's back to API in care of the Customer Service department. If you have any problems with this procedure contact the customer service department @ API-customerservice@teledyne.com.

FIRMWARE REPLACEMENT IN E SERIES ANALYZER

03-013 Rev B

Page 2 of 2