TELEDYNE
INSTRUMENTS
Advanced Pollution Instrumentation

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Service Note

98-027 Rev B
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REPLACING PROMS IN ANALYZERS

I. SCOPE:

This service note addresses the procedure for prom replacement in "A" style NO_X, "A" style SO_2, CO, O_3 analyzers as well as M700 calibrators. This service note does not apply when replacing the CPU.

II. TOOLS:

Flat Blade screwdriver

III. PROCEDURE:

A. You will have to go into the VARS menu & record some of the VARS that are listed there for the proper operation of the analyzer. to get to the VARS menu press "SETUP_MORE_VARS_929_ENTER" then press the next button until you get to the VARS that pertain to the analyzer that you are working on.

B. **M100A**

Slope=xxxx	
Offset=xxxx	
RS232_mode=xxxx	Machine ID (SETUP_MORE_COMM_ID)
Factory_opt=xxxx	Baud rate (SETUP_MORE_COMM_BAUD)

M200A

NOx_slope=xxxx	
NOx _offset=xxxx	
NO_slope=xxxx	
NO_offset=xxxx	
RS232_mode=xxxx	Machine ID (SETUP_MORE_COMM_ID)
Factory_opt=xxxx	Baud rate (SETUP_MORE_COMM_BAUD)

M300

CO_slope1=xxxx	
CO_offset1=xxxx	
CO_slope2=xxxx	
CO_offset2=xxxx	
RS232_mode=xxxx	Machine ID (SETUP_MORE_COMM_ID)
Factory_opt=xxxx	Baud rate (SETUP_MORE_COMM_BAUD)

M400

O3_slope1=xxxx	
O3_offset1=xxxx	
O3_slope2=xxxx	
O3_offset2=xxxx	
RS232_mode=xxxx	Machine ID (SETUP_MORE_COMM_ID)
Factory_opt=xxxx	Baud rate (SETUP_MORE_COMM_BAUD)

M700
Dark_offset=xxxx
O3_slope=xxxx
O3_offset=xxxx
O3_gen._flow=xxxx
O3_gen._mode=xxxx
Perm_flow=xxxx Machine ID (SETUP_MORE_COMM_ID)
RS_232_mode=xxxx Baud rate (SETUP_MORE_COMM_BAUD)
Factory_opt=xxxx Any sequences that you have stored in the sequence menu (not in the

C. Remove power to analyzer.
D. Remove cover from analyzer.
E. Locate V-F/CPU assembly, mounted on the motherboard.
F. On the right edge of the V-F card, you will see an edge connector plugged into a backplane assembly. The backplane assy. is held into the motherboard by a large flat-blade captive screw. Loosen this screw.
G. Lift the V-F/CPU assy. up from the motherboard and pivot it so that you can access the CPU. Removal of some cables from the CPU assy. may be required.
H. Locate the EPROM. This IC has a label on it that lists the model number, Prom revision number, etc. Use the flat blade screwdriver to remove this, noting which end has the "Pin 1 notch".
I. Install the new EPROM into the CPU, ensuring that the "Pin 1 notch" is oriented correctly.
J. Install V-F/CPU assy. back into analyzer.
K. Power on unit.
L. Press SETUP-MORE-DIAG. You will see the 818 password displayed. Change it to 929 and press ENTR. Press NEXT until you see RESET MEMORY displayed. Press ENTR. Press EEPROM and ENTR. The analyzer should go through a power on sequence, then display SYSTEM RESET. Clear the warnings.
M. Follow the procedure in your manual to calibrate the A/D-D/A circuits.
N. Follow the procedure in step A to access the Factory Options & any other VARS that you have written down when you checked the VARS in step A. Enter the numbers recorded in step A. After pressing ENTR, you will need to power the analyzer off, then on in order for the analyzer to read the factory options & the other changes that you have made to the VARS.
O. For the M300 analyzer you will want to recalibrate the Dark calibration in the DIAG menu when you are finished changing the prom & have the unit up & running.
P. For the M400 you will probably want to recalibrate the Dark calibration & the bench calibration (you will need to have some external source of O3 for the bench calibration), when you are finished changing the prom & have the unit up & running.
Q. If you are changing a prom in an M700 & have recorded any sequences that you had entered you will want to reenter the sequences now.
R. On M700 with photometer bench or a M400, a bench calibration should be done at this time, this will require that you have an external Photometer for the M700 & a source external source of O3 for the M400.
S. On Model 400 and 700, with O3 generator, you will have to perform the O3 Gen. calibration as described in the manual.
T. For all analyzer models, perform factory calibration per the appropriate manual.

If you have questions regarding this or any API equipment, please contact an API Customer Service Representative.

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