TELEDYNE INSTRUMENTS

Advanced Pollution Instrumentation

A Teledyne Technologies Company

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Service Note

07-010A
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CALIBRATING THE SPAN OF AN M460X ANALYZER

I.   **PURPOSE:**
To guide the user through the proper span calibration of an M460L, M460M, or M460H analyzer.

II.   **TOOLS:**
Computer with a Serial COM port.
Known stable source of ozone, or an Ozone Standard
Zero Air source or a zero air scrubber

III.   **PARTS:**
052490000 CABLE, RS-232, 10FT, M460 SERIES

IV.   **REFERENCES:**
If M460L then Service Note	07-005
If M460M then Service Note	07-008
If M460H then Service Note	07-009

CAUTION!

ELECTROSTATIC SENSITIVE DEVICE

DO NOT OPEN OR HANDLE
EXCEPT AT A
STATIC-FREE WORK STATION

The electronics used in T-API analyzers are sensitive to Electrostatic Discharge (ESD). When working on any T-API device, please ensure that you are properly grounded prior to handling or touching any electronic circuitry in the analyzers! For more information on how to protect sensitive components from ESD during handling, please contact T-API customer service and ask for the ESD Service note number 03-022A.

V.   **PROCEDURE:**

1.   First you must flow Zero air, or Pure O2 for the M/H analyzers, and wait 15minutes. After the analyzer has stabilized, perform a zero calibration by pressing both zero buttons on the front panel at the same time.
2.   First follow the appropriate service note to connect to the analyzer Via RS232. See section IV (references) for the service note you will need. If you do not have this service note, please contact TAPI customer service.
3.   Once you have connected to the analyzer Via RS232 and are communicating with it, type in the command below

   <address>LOGIN:929<CR>

   This will log in with the special 929 password allowing you to calibrate the analyzer.

4. Next, type in the command below

   <address>VLIST<CR>

   This will bring up a list of all the variables in the analyzer. Look through the list for one with the name O3 SLOPE, or O3 SPAN SLOPE. Around the 16th VAR should be the Slope. Record both the slope value and the VAR Number it corresponds with.

5. Now we need to recalculate the slope. To do this make sure your ozone standard and analyzer are both reading the same span gas or ozone concentration. Follow the steps below to calculate the New Slope value.

   (O3 concentration on analyzer) ÷ (Slope) = (True O3 value of analyzer)

   (O3 concentration on standard) ÷ (True O3 value of analyzer) = (New slope)

   Example:
   Slope of analyzer = 1.013
   Current O3 reading of analyzer = 8.70%
   Current O3 reading of standard = 9.00%

   8.70% ÷ 1.013 = 8.59%
   9.00% ÷ 8.59% = 1.048
   1.048 would be the New Slope Value that needs to be entered in the next step.

6. Now that you have the New Slope value, you will need to enter it in. To do this, type in the command below, for the example below I am assuming 16 is the Slope VAR number.

   <address>VSET:16,<New Slope Value><CR>

   For instance

   0VSET:16,1.048<CR>

   This will change the slope to the new value and your analyzer's concentration reading should match the standards reading.