



07-005D
1 August, 2008

CONNECTING TO AND CHANGING SETTINGS ON AN M460L/M/H

I. PURPOSE:

To instruct how to connect via RS232 to a M460L, M460M, or M460H Ozone Monitor for the purposes of data download and changing variables.

II. TOOLS:

Computer with a 9pin Serial Output.

III. PARTS:

052490000 CABLE, RS-232, 10FT



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.

IV. PROCEDURE:

1. Configure the COM port for RS-232. Move the 4 shunts on JP3 of the CPU PCA (P/N #03492) to the proper position as shown in Figure 1. The jumpers may already be in this position but this still needs to be verified. Also make sure that JP1 jumpered. It may be hanging off of one pin, make sure it is jumpered together as in Figure 1. JP2 can either be jumpered or not as it is already shorted on the board.
2. Connect the cable provided with the kit to 16 pin Signal I/O connector inside the analyzer. Connect the other end of the cable to your serial Com port on your computer.
3. Open up Hyper-terminal or another terminal program and set up a connection with the settings below. Your com port is most likely COM1.

PARAMETER	VALUE
Baud Rate	9600 bps
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

4. If you are not already connected, connect to the analyzer via your terminal program.
5. Type in the Commands below until you get a response, going from 0 to 9. This is finding the Address of the M460L.

When you see <CR> press the ENTER button on your keyboard.

003<CR>

103<CR>

203<CR>

“ “

903<CR>

One of these will get a response from the analyzer. When it does, the first number in the command line is the address of the analyzer. Record this number down on piece of paper. For the rest of this document it is assumed that 1 is the analyzer's address.

6. Next we will pull all of the test data from the analyzer. These are the most important factors for determining if an analyzer is working ok. Type in the command below:

1TLIST<CR>

This should pull up a list of all the test values. Their nominal values are located in your manual.

7. The last command we are going to deal with is the Vars commands. The Vars tell the analyzer how to run and there are some that may require changing throughout the years based upon the analyzers application. First we need to find the current Vars and what the number is. To do this, enter the command below:

1VLIST<CR>

You will now have a list of the Vars in the analyzer. See Table 1 for a description of each of these Vars.

8. If you wish to change a Var from one setting to another you must use another command. It must first follow the following format:

<address>VSET:<var_index>,<new_value><CR>

For Example in the M460L, below is the command to change the concentration units from PPB to PPM.

1VSET:6,1<CR>

Notice that after the “:” the 6 refers to the concentration units, and the 1 after the “,” refers to PPM. All this information is located in Table 1A.

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For Example in the M460M or M460H, below is the command to change the concentration units to g/Nm³.

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1VSET:6,1<CR>
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Notice that after the “.” the 6 refers to the concentration units, and the 1 after the “,” refers to g/Nm³. All this information is located in Tables 1B & 1C.

9. After viewing the data you can return the analyzer to normal operation. If you change any of the Vars, it is recommend to simply turn the analyzer off and back on and return it to normal operation.

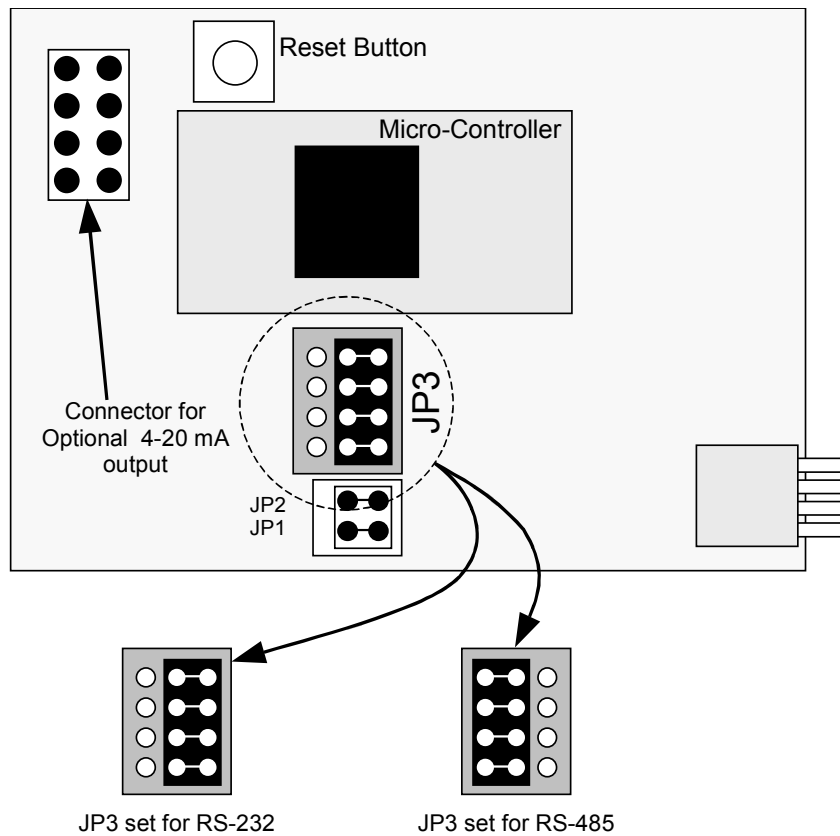


Figure - 1

Var_Index	Name	Description	Allowable Range
0	ANALOG_RANGE	Sets the full-scale concentration range for Analog Output scaling	1 ppb - 1000 ppb 0.001 ppm - 1.000 ppm
1	ALARM_ENABLE	Enables or disables the Concentration alarms	0 = disabled 1 = enabled
2	ALARM_MODE	Selects latching mode or non-latching mode for both alarms.	0 = latching 1 = non-latching
3	CARRIER_WEIGHT	Sets the molecular weight of carrier gas for wt% calculations (e.g. 32.0 = O ₂)	27.0 - 32.0
4	COMM_MODE	Not Used	N/A
5	IIR_FILT	Sets the sensitivity of the software filter used by the monitor to reduce noise and hysteresis in the reported O ₃ concentration reading.	0.05 - 1.0
6	CONC_UNITS	O ₃ concentration measurement units	2 = ppm 3 = ppb
7	HI_AL_LEVEL	Sets the trigger limit of the HI alarm	10 ppb < x < 1000 ppb 0.010 ppm < x < 1.000 ppm
8	HIHI_AL_LEVEL	Sets the trigger limit of the HI-HI alarm	10 ppb < x < 1000 ppb 0.010 ppm < x < 1.000 ppm

Table - 1A (M460L)

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Var_Index	Name	Description	Default Value	Allowable Range
0	ANALOG_RANGE	Full-Scale concentration range for Analog Output scaling	5.0	5.0 – 400.0
1	AZERO_ENABLE	Auto-Zero Enable VAR. (only valid if Auto-Zero hardware is installed)	1	0 = Off 1 = On
2	AZERO_PERIOD	Period for Auto-Zero Calibration timer in minutes	6.0	5.0 - 86400.0
3	CARRIER_WEIGHT	Molecular weight of carrier gas for wt% calculations (32.0 = O ₂)	32.0	27.0 – 32.0
4	COMM_MODE	Not Used	0	N/A
5	IIR_FILT	Sets the sensitivity of the software filter used by the monitor to reduce noise in the reported O ₃ concentration reading.	0.25	0.05 – 1.0
6	CONC_UNITS	O ₃ concentration measurement units	2	0 = wt%; 1 = g/Nm ³ ; 2 = ppm

Table – 1B (M460M)

Var Index	Name	Description	Allowable Range
0	ANALOG_RANGE	Full-Scale concentration range for Analog Output scaling	5.0 – 400.0 (Units are current unit of measure, wt% or g/Nm ³)
1	AZERO_ENABLE	Auto-Zero Enable VAR. (only valid if Auto-Zero hardware is installed)	0 = Off 1 = On
2	AZERO_PERIOD	Period for Auto-Zero Calibration timer	5.0 - 86400.0 Seconds
3	CARRIER_WEIGHT	Mol weight of carrier gas for wt% calculations (32.0 = O ₂)	27.0 – 32.0 mol weight
4	COMM_MODE	Not Used	N/A
5	IIR_FILT	Digital Concentration filter	0.05 – 1.0 (1.0 = No Filtering, lower values increases filtering)
6	CONC_UNITS	O ₃ Concentration measurement units	0 = wt% 1 = g/Nm ³

Table – 1C (M460H)