TELEDYNE
INSTRUMENTS
Advanced Pollution Instrumentation

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Service Note

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M465L Modbus Communication Setup

I.   PURPOSE:

This document will go through how to setup your computer with "ModBus Reader" and use it to communicate to the M465L. It will also go through how to use it for data logging purposes.

II.   TOOLS:

ModBus Reader with M465L Configuration files (Available on the Website under "software")
RS232 serial Cable

III.   PARTS:

None

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.

IV.   PROCEDURE:

1. "ModBus Reader" is a FREEWARE product of KurySoft. The FREEWARE is available at http://www.kurysoft.com/download.shtml or our website at, http://www.teledyne-api.com/software/. Please download "ModBus Reader" form one of these websites.
2. Please go to our website and download the **M465L configuration files**. If you choose to download ModBus Reader from our website, you should visit the Kurysoft website to review the "END-USER LICENSE AGREEMENT"
3. Connect a 9 pin serial cable from the RS232/485 port on the back of the analyzer to your computers serial port. Remove the cover of the analyzer and on the circuit board close to the location of the RS232 port you should see two LEDs. They are labeled D2 (red) and D3 (green). Both of these LEDs should be on. If they are not, switch the DCE/DTE switch on the back of the analyzer to the other position. Both lights should now be on, if they are not, check your cable connections again.

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4. Unzip the "ModBus Reader" file and copy the .EXE file to your desktop. Double-click on the icon to begin the installation process. When you get to the Associated Extensions screen, you will want to check both the .mbc and .mbs boxes.

5. Unzip the M465L Configuration files and place both files in the same directory that ModBus Reader was installed into. The default for this is C:\Program Files\ModbusConstructor.

6. After the installation has been completed, launch ModBus Reader.

7. Go to FILE, OPEN, and open the file "M465L.mbs".

8. Go to Connection and then COM Parameters and make sure that all of the settings are as follows

Port:	COM1	(The serial port on your computer, most use COM1)
Baud rate:	57600	
Parity:	None	
Stop Bits:	1 stop bit	

9. Once these settings are correct, click OK. Go to Mode and select Master Settings. Make sure the "Slave Address" is the same as the address on your M465L. The default for this value is "1". To confirm the address on your analyzer follow the directions below.

   a. At the instrument: Press <u>Config</u>
   b. Press the <u>Down Arrow</u> 3 times
   c. CONFIG will show on the display, Press <u>Enter</u>
   d. Press the <u>Down Arrow</u> 1 time
   e. ADDRESS will show on the display, Press <u>Enter</u>
   f. The display will show COMM ADDRESS = (number)
   g. Record the number, this is your analyzers Slave address
   h. Press Config 3 times to return to the concentration display

10. Once the address has been entered into the Slave address, press OK. Go to Connection and make sure that COM1, or which ever com port you selected, has a check mark next to it. If it doesn't, select COM1.

11. Go to Connection and then to Connect. The boxes in interface screen should now be updating with numbers.

DATA LOGGING

12. In the ModBus Reader program go to Tools and then Data Logging Setup. Make sure that the following settings are correct.
   - **<u>Write to common file (by session)</u>** is selected
   - **<u>Write on every response</u>** is checked
   - **<u>Open new file on connection</u>** is selected
   - **<u>Save file every, minutes</u>** is checked
   - **<u>Absolute time</u>** is selected

13. Once these values are selected press OK. Go to Tools and then select Start Data Log. The ModBus Reader will now start to save all of the values that are seen on the screen. This file is saved in the same directory as the one that the ModBus Reader was installed into. You can open this file in Excel or other program. The file is "TAB" delimited.

<u>NOTE:</u> If you wish to create your own user interface screen to communicate to the analyzer you can go to the website http://www.kurysoft.com. This has the ModBus Constructor program which has a free trial period but must be purchased after a trial period. This program can be used to create interfaces similar to the M465L interface.