

Instruction Manual

Rev. A030609

MS-418 DATA LOGGER & CONTROL

MS-418B DATA LOGGER POWER SUPPLY



Serial Number: _____



Eddy Company
13590 Niabi Road
Apple Valley, CA 92308

Phone: 760.961.8457 Fax: 760.961.8458
Internet: www.eddyco.com

NOTE:
THE INFORMATION AND DATA IN THIS MANUAL IS SUBJECT
TO CHANGE. PLEASE CONTACT THE EDDY CO. FOR THE
MOST UPDATED VERSION

TABLE OF CONTENTS

GENERAL INFORMATION:

Basic Description.....	1
Unpacking/User Responsibility.....	2

INSTALLATION:

Install Software.....	3
RS-232 to USB Adapter.....	4
Initial Setup.....	6
Controller Interface Software.....	8
Cell Monitor Software.....	9

BASIC DESCRIPTION

Its a support system used to optimize control and record the operating parameters of the filter.

The controller is used in conjunction with one LabView program to optimize the operational parameter of the filter. It contains its serial number and the filters serial number and the previously recorded operational parameters. It is designed to record temp and power every two to 20 min. while filter is in operation. This recorded data may be conveniently downloaded to an excel file format. This unit may be powered from the supplied MS-418B or the users 15 volt 1 Amp power supply. The communication is implemented thru a standard 3 wire RS-232 port.

When in operation the Cell Monitor program will provide in real time the filter parameters being recorded.

There is 1 input bit used to turn on the heaters and there is 1 output bit to indicate over current and 1 output bit to indicate at temp. The over current signal indicates that the normal warm-up process is occurring and if it continues to stay on when the AT TEMP LED comes on this will mean an overpressure in the filter. The at temp light is an indication that both the reservoir and body temps are within 2 Deg. C of the set temp.

A two pin connector is supplied to monitor the temp at any user defined location in the filter system.

UNPACKING

DANGER

Potentially lethal voltages may exist in the unit, even with the power switched off. Service should be attempted only by experienced personnel. Failure to observe safety protocols that are standard for high voltage equipment could result in personal injury.

1. Completely unpack the instrument. Your MS-418 was released to the carrier in good condition and properly packed. It is essential to examine the contents of the shipment to ensure that no damage occurred during transit.

2. Compare the shipped materials to the packing list. Items included with your MS-418 System are:

- a. MS-418
- b. MS-418B
- c. Power Cable
- d. (2) Interconnect Cables
- e. RS-232 to USB Adapter
- f. 6 ft. RS-232 Cable
- g. Software CD



3. Call Eddy Company first if there are any problems.

Phone: 760.961.8457

Fax: 760.961.8458

E-mail: tech_support@eddyco.com

USER RESPONSIBILITY

The equipment will perform in accordance with the instructions and information contained in the user's manual when the equipment is installed, operated, and maintained in compliance with the instructions. Equipment should be checked periodically, routine maintenance performed and broken or non-working parts replaced immediately.

The user/purchaser shall have sole responsibility for any malfunctions resulting from their improper use or lack of maintenance of the equipment.

INSTALL SOFTWARE

The first thing to do is install all of the software provided. Do not connect any components to the computer before installing the software.

Insert the CD into your Optical drive. Open the CD “MS-418_SW” (Fig. 1) and find the folder called “RS-232 to USB Adapter”. Open it and double-click on the “CDM_Setup” application and run it. When installation is complete you will get a message saying “FTDI CDM Drivers have been successfully installed.” and click Ok.

The next software program to install is the MS-418 Controller Interface. Find the folder called “MS-418 Controller Interface”. Inside that folder will be a folder called “Installer”. Open it and find the application called “Setup”. Double-click Setup and click the “Next” button when prompted. There are no settings to be changed in the installer. Once the installation is complete then click on the “Finish” button. You will then be asked to restart your computer, click No.

The last program to install is the MS-418 Cell Monitor. Find the folder called “MS-418 Cell Monitor”. Inside that folder will be a folder called “Installer”. Open it and find the application called “Setup”. Double-click Setup and click the “Next” button when prompted. There are no settings to be changed in the installer. Once the installation is complete then click on the “Finish” button. You will then be asked to restart your computer, click Yes.

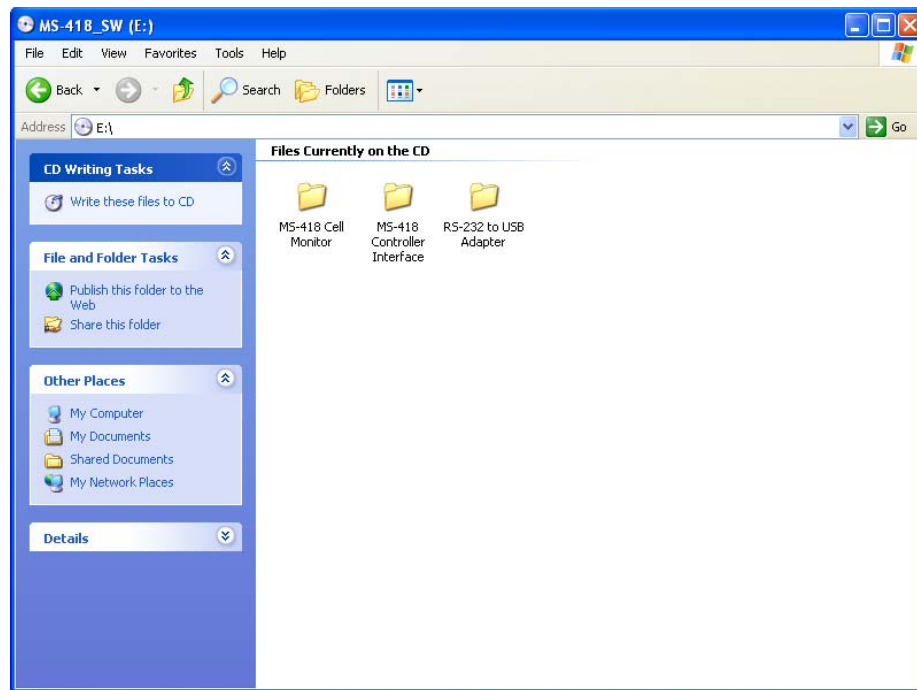


Fig. 1

RS-232 TO USB ADAPTER

Plug in the RS-232 to USB Adapter into an open USB port on your computer. The computer should now recognize the hardware and install the proper drivers. Now follow the instructions to setup the Adapter to use the correct COM Port setting.

Here are the instructions to changing a COM port number. **NOTE: These changes should only be performed by an individual who is proficient in working with computers. If you feel you will have trouble performing this task please call the Eddy Co. for assistance. Please take care not to affect other devices as that may cause other systems to fail.**

Here is a list of the COM port numbers and there associated device.

<u>COM PORT</u>	<u>DEVICE</u>
2	MS-418

Each USB-Serial device is unique and for each that is plugged into a single computer the device will be assigned a COM port number that has not yet been assigned. As stated before the systems are sent out with these settings already made. In the event you had to replace any of the USB-Serial devices then you would need to reset the new device to the correct COM port number. **NOTE: USE ONLY AN APPROVED EDDY DONGLE. USE OF A NON-APPROVED DEVICE MAY CAUSE SYSTEM FAILURE. CALL 760-961-8457 FOR ASSISTANCE.**

To set a COM port number you must first right-click on the My Computer icon on the Desktop of the computer and select Properties. Next click on the Hardware tab and select Device Manager. Click on the + symbol next to Ports. A list of devices should pop down from Ports, see Fig. 2.

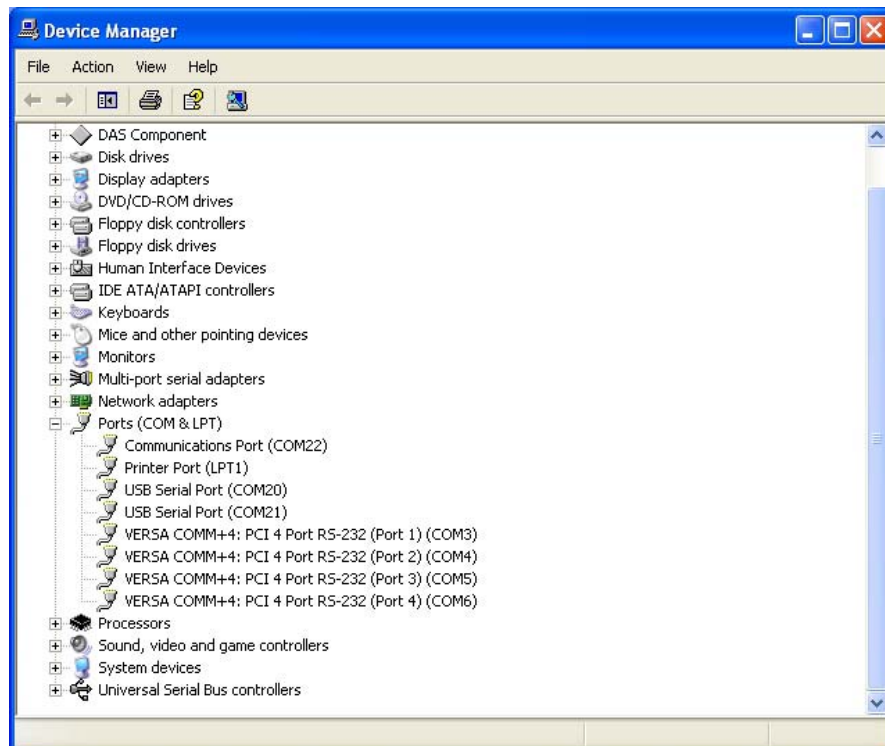


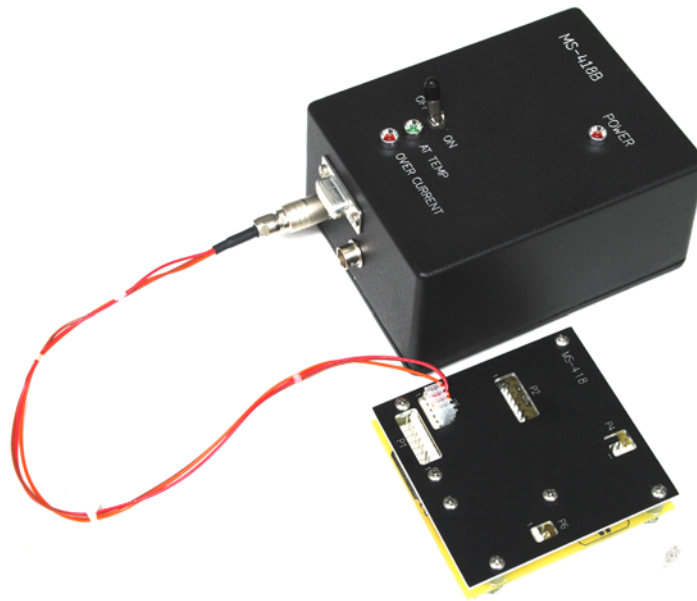
Fig. 2

In this image there are two USB-Serial devices connected to this computer. You will have just one. To change the COM port number of a device follow these steps. **NOTE: Make sure that the device you are about to alter is the intended device. You can check by pulling the USB cable of the device out of the computer. The device will then disappear from the list. Then you know for sure you are altering the correct device.**

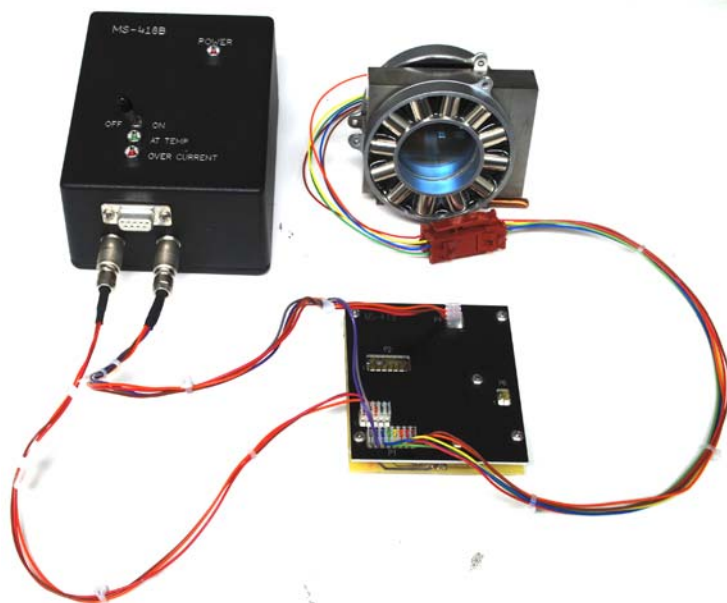
- Step 1. First right click the device you wish to edit and select Properties from the popup menu.
- Step 2. Click on the tab named Port Settings.
- Step 3. Click on the button Advanced...
- Step 4. Click on the COM Port Number popup and select the COM port number you want to use. As long as you are sure about the number you want you can select it even if it says (in use) next to it. That just means it was once associated with another device.
- Step 5. Click OK to close the Advanced Settings window.
- Step 6. Click OK to close the USB Serial Port Properties window.
- Step 7. Close out the Device Manager window by clicking the red X in the upper right corner of the window.
- Step 8. Click OK to close out the System Properties window.
- Step 9. Restart the computer and test the device.

INITIAL SETUP

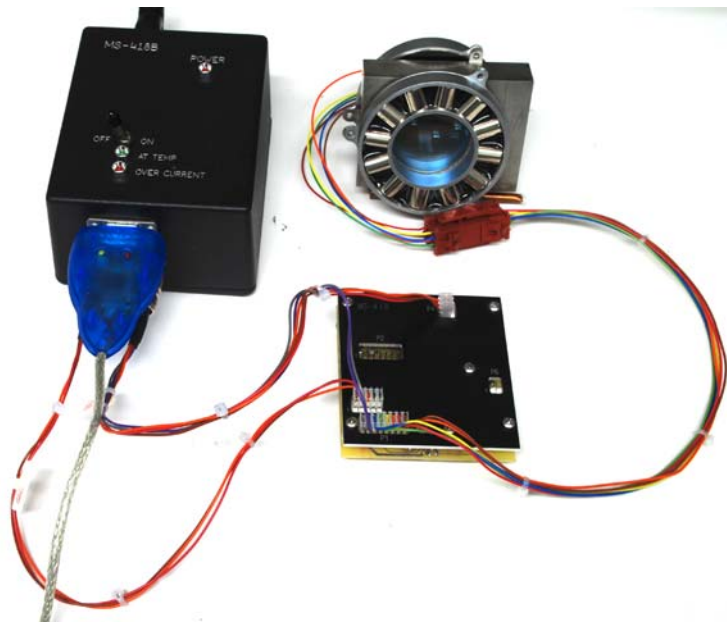
First take the MS-418 and the MS418CBL1 cable. Once end plugs into the MS-418B and the other end plugs into the MS-418 on port P5.



Now connect MS418CBL2 and connect it to the MS-418B and connect the 8 pin connector to P1 and the 3 pin connector to P4. The 6 pin connector plugs into the filter connector.

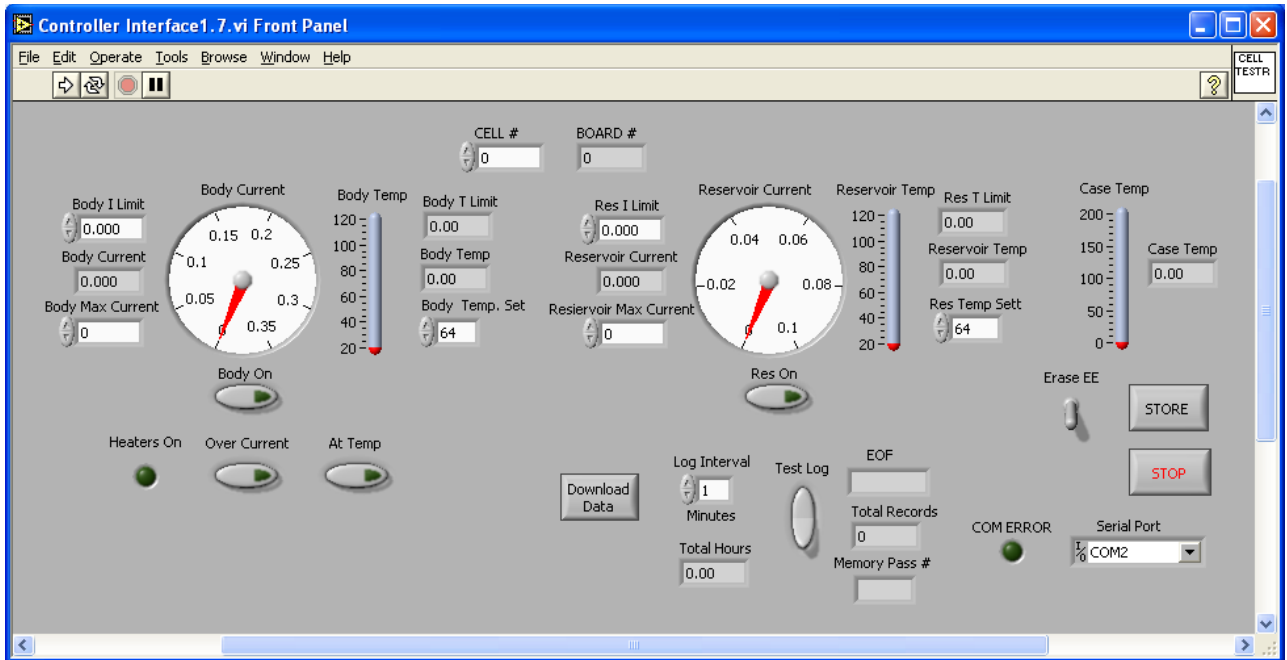


Now connect the RS-232 to USB connector to the MS-418B. Then connect the USB port to the computer.



CONTROLLER INTERFACE SOFTWARE

Now with the MS-418B heater switch, in the OFF position, turn on the main power. The AT TEMP and OVER CURRENT LEDs will be lit for about 6 sec. Launch the MS-418 Controller Interface application. Press the white arrow located in the upper left of the window to RUN the application. At this point the operational parameters in the controller have been uploaded from the MS-418 to the application. These include Body Max. Current, Body Temp. Set, Reservoir Max. Current and Reservoir Temp. Set. The cell number and board serial number will appear in the display. The board serial number is factory programmed and the cell number is user modifiable.



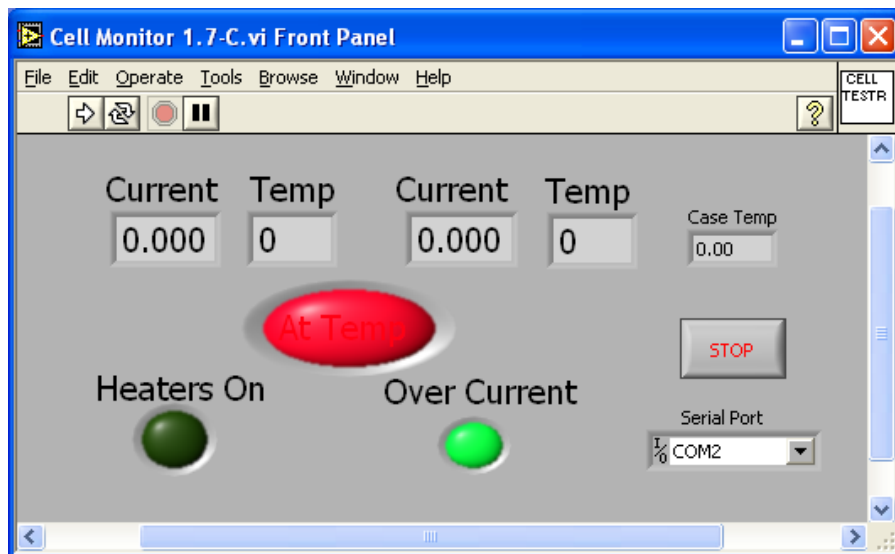
If the appropriate operational parameters have been set in the controller then you may proceed by activating the Body ON switch. At this point the max current setting will limit the power to the heater and the body temperature will increase. After the body temperature reaches the set point the body current will decrease and the temperature will then stabilize. With the body at the operational temperature the Reservoir ON switch may be pressed. At this point the reservoir current will go to maximum as the reservoir temperature approaches the set point. When the reservoir is at the set temperature the heater current will decrease.

At this point the cell is operating under the conditions programmed in the Controller Interface program. The operating parameters may be modified and the cells performance evaluated. If an improved set of operating parameters are established then by pressing the STORE button these settings will be downloaded to the MS-418 and stored in memory. By activating the AT TEMP or OVER CURRENT controls will turn on the AT TEMP and OVER CURRENT LEDs on the MS-418B power supply control. This establishes that the two outputs are functional. Then by turning on the MS-418B heater switch you can observe the green LED on the software panel indicating the input is functional. At any time the cell may be turned off by activating the STOP button in the lower right of the program.

To read out the recorded operational data press the DOWNLOAD DATA button on the front panel of the software interface. A dialog window will appear. The Eddy Co. recommends using this naming convention (CELL#_DATE). So an example might be something like "00101_03-05-09". The MS-418 can record a maximum of 20,000 data points. Once the memory is full it will then begin to overwrite the oldest data working its way to the newest data. The last 20,000 data points will be available for download.

CELL MONITOR SOFTWARE

To use the Cell Monitor Program you first turn on the main power of the MS-418B. Then turn the heater switch on the MS-418 to the ON position. Now you may start the application by pressing the white arrow in the upper left of the screen. Observe the Current and Temp of the body and reservoir on the front panel of the software.



Initially the over current will be RED indicating an over current and the AT TEMP will be RED indicating that it is not at set temperature. While the main body is approaching operational temperature the current is switched off and on to keep the reservoir area equal to or lower than the body during heat rise. To stop the program press the STOP button in the lower left of the software.