This procedure is for the setup and use of the Addresser 3.18 program. The Addresser is a READ/WRITE Program with drop-down menus for convenient user interface between your PC or laptop and Modbus Terminals of the SAGE PRIME, RIO, and the 100/200/300 Series with Modbus activated.
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Addresser Installation

1. Insert the Addresser disc or if downloaded from the Sage Website
   
   A. You will see:
      
      ![Files Currently on the Disc](image)
      
      1) Extract the Addresser Installer.zip and the ULinx USB installation.zip files.
      
      B. Double click on the Addresser Installer folder and you will see: (Note: If your computer does not show the .exe or .ini extensions shown here the setup Application is the executable file)

      ![Files in the Addresser Installer Folder](image)
      
      1) Now double click on the setup.exe file.
      2) You may get the following warning.

      ![Security Warning](image)
      
      a. Click RUN
      
      3) It is recommended that you DO NOT install the Addresser program in the Default location noted below. Instead of
      
      Create a folder directly onto your C drive that is titled Sage. Then click on the Browse button and then select the Sage folder just created.

      ![Directory for Addresser](image)
1. The destination noted for the National Instruments files is correct.
   a. Once you have selected the Sage folder, click Next to Start Installation

2. 

3. The destination noted for the National Instruments files is correct.
   a. Once you have selected the Sage folder, click Next to Start Installation

4) 

5) Click Next to see the following
6) Once the Installer has finished, go to the Addresser program location. Highlight the Addresser.exe Application and then create a shortcut to it. You can then place this shortcut onto your desktop for ease of access.

7) Click Finish

8) C. Once the Installer has finished, go to the Addresser program location. Highlight the Addresser.exe Application and then create a shortcut to it. You can then place this shortcut onto your desktop for ease of access.
ULinx USB Installation – B&B Disc

2. You will now need to install the ULinx RS485 USB Adapter. There should be a B&B disc included with your order but the files have also been included on this disc. Open the folder labeled ULinx USB Installation.

A. If you double click setup.msi, Windows Installer, it will walk you through the ULinx install and setup.

B. The following illustrations are from the ULinx website. They may be informative.
3. After the ULinx software and drivers have been installed verify the dip switches on the back of the ULinx are positioned to the 2 wire, RS-485 side as noted in the figure below.

   A. With power to the meter off, connect the ULinx GND to pedestal C1; ULinx RDB(+) to pedestal C2; and ULinx RDA(-) to pedestal C3 as noted in the figure below. Connect the USB cable from the ULinx to one of your computer’s USB ports.

   B. Power may now be applied to the meter.

Determine RS485 Port

4. Once the Addresser and ULinx applications have been installed, and everything has been connected as instructed in step 4 you need to check which com. port on your computer is assigned the RS485 port.

   A. Right click on the My Computer Icon on your Desktop and then select Manage.
Then select Device Manager

and then select Ports (COM & LPT)

B. The RS-485 Port (COM4) shown in this example indicates that your ULinx is connected to the COM4 port of your computer. Your system may assign another Comm Port location.
Read Register Failure

C. Now open the Addresser application.

D. If the Port has not yet been selected, the Addresser will NOT begin loading registers. You will then see:

E. Click on New Port. The drop down should show the Comm Port identified in step 4 above.
F. If the appropriate port is not listed in the Drop Down, click refresh and then check the drop down again. Highlight the appropriate com. Port and click Select.

G. Then click Stop.

Device Address/Slave ID

H. NOTE: The Addresser software (by default) communicates with Slave ID/Device Address 30.hex (48 decimal). However, meters are generally shipped with IDs of 31.hex (49 decimal) or greater to reduce communication complications with multiple meters.

1) If your Sage meter is at Slave ID/Device Address of 31 hex or something other than the default 30 hex, the Addresser will not communicate initially without some adjustments.

2) You may change the slave ID that the Addresser will communicate with by changing the Device Address in the upper left of the Addresser display.
3) Note that the Device Address is listed in decimal when the Addresser begins. If desired you can have the Addresser indicate this in hex which is how the meter display shows it. Follow these instructions:

If you click on the Gray box that is next to the Address, you can change from the default Decimal version of the Address to Hex. During meter startup, the Device Address is expressed in hex.

Determine Device Address

4) You can then change the Device Address to the Address of your meter. There are different ways that you can determine your meter’s Device Address.

5) When first starting Addresser, if it is not communicating you can get the display to Stay Offline, New Port, or Stop.

   If port has already been selected you may now click on Stop.

6) You can use Addresser search function, select Find Address
1. The Addresser will then work through all possible Device Addresses and “Should” find the correct one and begin communication.

2. Note: We say “Should” only because it sometimes searches past the proper address without selecting it. Should this occur, try the following:

   a. Cycle power to your meter and observe the display during the meter initialization to determine the Device Address.

   ![Image of meter initialization](image)

   Note the 0x31 indicates the Device Address/Slave ID in hex.
7) You may also find the Device Address/Slave ID by reviewing the Certificate of Conformance supplied with every new meter.

Note the Slave ID = 31 HEX to the right of the Serial number.
8) Once the Device Address/Slave ID has been determined you can enter it into the Addresser.

9) Change the Decimal Address to Hex

10) Enter the Device Address/Slave ID just determined.

11) Now activate Addresser again if the Port and Device Address have been corrected by clicking on the Arrow symbol in the upper left corner of the Addresser display.

12)
I. It is highly recommended at this time to save a copy of the data in the meter as it was supplied by the factory as a backup. See Save2File on Page 25

Reading / Changing Registers
(Note that the pictures in the following paragraphs are taken from an earlier version of Addresser (3.14). The results are the same with 3.18.

1) Now we can review the various registers that you may look at within your meter. Making changes to most of these registers should not be done.

User Passcode Required
2) The first time that you click on Write Reg to change a setting you will get a screen that says User Passcode Required.

1. This is a Passcode for Factory Only changes. Pressing Accept or Bypass will allow you to make changes to the unrestricted registers, (see para. H. below) without entering any Passcode. Restricted registers will be read only.
2. Go back to the Meter Tab, and then click on the window beneath Register Select to get a scroll listing of available registers.

Registers that Should Not be Changed

J. We should first review a list of the Registers that should NOT be changed

1) Cal Val, Lead Gain, Load Res, Temp Disp Null, Temp Disp Gain, Amp Null, and Amp Gain should generally be left alone as they were set by the factory.
2) Temp [A], [B], [C], & [D] are curve coefficients for the temperature calibration. These may be checked to verify they are at the factory settings, but should not be changed in the field.
3) Register flow [A] – flow [F] are flow coefficients. These may be checked to verify they are at the factory settings, but should not be changed in the field.
4) Registers below Units per Pulse in the scroll down menu should also be left alone.

Registers you can change

K. Following is a list of Registers that may be changed with or without passcode.

The K-Factor register

1) The K-Factor is a useful register when Changing Pipe Size for the flow application. Default K-Factor is 1.
   1. If the factory calibration was set up for a 4” Sch 40 but you now want the meter to be placed in a 6” Sch 40, you need to set the K-Factor to
the ratio of the pipe areas. Since you are placing the meter in a larger pipe, the mass flow for the same sensor mW reading will be greater.

2. Divide the 6” area by the 4” area, \( \frac{0.200629}{0.088405} = 2.2694 \). Assuming the K-Factor is now 1.000000, 2.2694 will be the new K-Factor value.

3. Select the K-Factor register by clicking the window below Register Select, then selecting K-Factor.

4. Then note the value in the window below IEEE Data – this is the existing K-Factor in decimal.

5. To change the K-Factor in decimal the box beneath IEEE must be checked as seen above. Highlight the number in the IEEE Data box to enter a new K-Factor.

Filtering

2) Register Filtering deals with the meter’s response time and varies between 0.000001 (slowest) & 0.999999 (fastest). 0.5 is the typical factory setting
ADDRESSER PROCEDURE.doc

Min Flow/LFC

3) Min Flow/LFC default is zero. This is the minimum flow setting, i.e. 0 SCFM. If a low flow cutoff is desired, it may be entered here. Note that the 4-20 mA output will remain at 4.00 mA until the actual flow has exceeded this cutoff setting. The current output will then jump to the value determined by ((flow reading/full scale)*16) +4.

Full Scale

4) Full Scale is the value of full scale in the Engineering Units of the meter, i.e. 1500 SCFM. This corresponds to 20 mA output. This value may be changed, but the accuracy specification will still be based upon the original full scale. The coefficients flow [A] – [F] remain the same.

Min Temp

5) Min Temp is default 40.

Units per Pulse

6) Units per Pulse refers to the Pulse Count, i.e. 1 pulse for every 100 SCF (Standard Cubic Feet).

Engineering Units

L. Engineering Units. **Caution, changing engineering units will require a change to the K-Factor and full scale.** Enter the desired units in the Units Text box, 4 digits for rate and 3 for total.

a. Select the **System tab** in the lower section of the Addresser display.

b.
2. Prime will only measure in terms of seconds, minutes, hours, or days. The 4th character of the rate must be S, M, H, or D. Do not use lower case.

3. When changing engineering units in terms of days, hours, minutes, or seconds, there will be no affect on the totalizer until the meter power is cycled off then on, or the meter is reset.

4. These K-factors are required for the following changes:
   a. SCFH to SCFD -> K-Factor = 24
   b. SCFM to SCFH -> K-Factor = 60
   c. SCFM to SCFS -> K-Factor = 1/60 = 0.016667

5. The full scale will need to be changed as well. You may increase it by 24 times if changing from SCFH to SCFD, by 60 times if going from SCFM to SCFH, or decrease it to 1/60 if from SCFM to SCFS.

Deg F or Deg C
M. You can also change from Deg F to Deg C. Click in the appropriate circle.

Optional Baud rate and Parity
1) Optional Baud rate of 9600, and parity ODD or NONE may also be selected.
a. Caution, changing from the default settings will affect how you can communicate through the Addresser to the meter under test. If these settings are changed, and the communication link is broken, you cannot just restart the Addresser as in the beginning.

b. If baud rate or parity has been changed, the meter must be powered down, then back on again. Also, the Addresser must be stopped and restarted during the power up sequence, by clicking on the arrow symbol at the upper left portion of the Addresser display before the meter initialization has completed (approximately 10-12 seconds)

c. 

d. You can also change the Slave ID, click on SetSlaveID.

e. Enter the new address in Hex, and then click OK.

f. Note that the Device Address in the upper left corner of the Addresser is in Decimal in the default mode. This can be changed to hex. Click the dark gray box to the left of the address block, and then select how you want the Device Address shown.
Change Number of Decimals Displayed

2) You may also set the number of decimals to be displayed on the meter display, from 0 to 3 decimals. In the System tab, Click Set Disp Decimal.

3) Move the slider to the left until the desired decimal is shown, then click OK.

Screen Saver

4) Note that this same Set Disp Decimal box also has Screen Saver listed.

   1. If your meter is equipped with Screen Saver code, 1.88 and newer, you may optionally turn off the screen saver though this is not recommended. The Screen Saver is standard on the Prime to extend...
2. A check in the ScreenSaver box turns screensaver mode on.

3. No check signifies ScreenSaver is off.

Factory Serial Number

5) The Factory Serial# cannot be changed.

Output Settings

6) Select the Outputs tab in the lower section of the Addresser display. This controls the output settings.

a) With No DAC checked, there is no 4-20 mA or pulsed outputs.

b) Flow Out gives only 4-20 mA output for flow. Note if the Units/Pulse register has been changed the temperature reading of the meter may be affected. If using Flow Out, reset Units/Pulse to 200 (default).

c) Temp Out gives only 4-20 mA output for temp.

d) Pulse Out gives both flow 4-20 mA and Pulsed output. Pulse width can be adjusted from 10 mSec to 1,000 mSec.
a. The 4-20 mA output, whether for flow or temp, is set by adjusting the sliders or the numbers in the boxes next to Min and Max.

b. Click the Command Bit SET OUT LOW, and then adjust the mA output to 4.00 mA as measured between pins C5 & C6 of the user accessible terminals.

c. Click the SET OUT LOW Command Bit again to turn it off, then click on SET OUT HIGH, and then adjust the mA output to 20.00 mA as measured at pins C5 & C6.

2. If Pulse Out is selected, the flow 4-20 mA and pulsed output are both activated. The number of mass flow units per pulse is set with the Units per Pulse Register previously described.
N.  Note: Save2File should be accomplished as a backup BEFORE changes are made to a meter fresh from the factory.

1) Click on the File tab

2) Now select Save2File.

3) You will be asked to enter a file name and location to store a .dat file. This file will contain the necessary data to reset the meter to the initial configuration if improper changes are made and the meter is not functioning properly.

4) You may also make a copy of a Report of the meter Registers. Click on Print Report.
1. You should get a list of Printer Selections for your computer.

2. Select an appropriate option. You will see a report similar to this:
To restore a saved .DAT file such as created in Save2File

5) Select LoadFile.

1. Select the .DAT file you wish to restore:
2. When you click OK the Addresser will be loaded with the registers stored in the .DAT file selected.
3. A reminder to Save2Meter will come up on the display
4. Click OK, and then click on Save2Meter
5. This will transfer the data from the Addresser to the meter.

Additional Register Changes

5. For changes to other registers, please consult factory.