

# KrosFlo<sup>®</sup> RESEARCH II PERMEATE SCALE




## KrosFlo<sup>®</sup> Research II Permeate Scale

Product Information and Operating Instructions



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Spectrum®'s KrosFlo® Research II Permeate Scale meets strict quality control standards and are warranted against defects in material and workmanship for a period of one year from date of purchase.

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## 1. Introduction

The KrosFlo® Research II TFF system is the ideal tool for performing small scale Tangential Flow Filtration processes. The KrosFlo® Research II Permeate Scale is an accessory component to automate the data collection by measuring the mass of the collected permeate over time. The system sends the data via a USB cable to an Excel® spreadsheet where the data is then automatically tabulated and graphed.

## 2. Installation

**\*\*NOTE: Always have the scale OFF when plugging the USB cable into a PC.**

**\*\*NOTE: NEVER turn on the computer with the permeate scale ON. Windows will not be able to load the correct drivers.**

### a. USB/Serial Adapter

- i. Add the USB/Serial adapter to the bottom of the scale, follow the instructions provided with the adapter.

### b. Programming the Scale

- i. See Table on page 2 for the correct factory settings. Confirm the settings or change them if needed by following the protocol below.
  1. Enter the Setup mode by holding the *ON/ZERO* button down for >5 sec.
  2. For navigating in the setup mode use the *ON/ZERO* button as the **SELECT** button and the PRINT button as the **SCROLL** button.
  3. Press the PRINT button to scroll through the menu – there will be 6 different options (**Calibrate, Setup, Units, Print, USB, END**).
  4. Go to the **Print** function and hit the *ON/ZERO* button to select. This will bring up 3 options (**Stable, A-Print, and END**)
  5. Go to **Stable** function and select. This will give you 2 options (**ON, OFF**).
  6. With *PRINT* button scroll to **OFF**.
  7. Select the **OFF** option.
  8. Scroll to the next option, **A-Print**.
  9. Set this to **CONT** if not already selected.
  10. Scroll to **END** and select. This will take you back to the first level of options.
  11. Scroll to **USB** and select.
  12. Select the **BAUD** function.
  13. Scroll to **2400** and select.
  14. Scroll to Parity and select **7-none**.
  15. Scroll to Handshake and select **None**.
  16. Scroll to **END** and select.
  17. Scroll to **END** again and select.

ii. Quick view of SETUP options and correct factory settings (in bold):

CAL	SETUP	UNITS	PRINT	USB	END
YES/NO	Auto-Off	G	Stable	USB	
	<b>On/Off</b>	<b>On/Off</b>	<b>On/Off</b>	<b>On/Off</b>	
	Lin Cal Yes/ <b>No</b>	(others not shown)	A-Print <b>Cont</b> On.stbl 5 sec 15 sec 30 sec 60 sec Off	Baud 600 1200 <b>2400</b> 4800 9600 19200	
	LFT <sup>2</sup> <b>On/Off</b>		END	Parity 7-even 7-odd <b>7-none</b> 8-none	
	Mode Hold/Totalize/ <b>Off</b>			Handshake <b>None</b> Xon-Xoff RTS-CTS	
	END			END	

c. **USB/Serial Adapter Driver\***

- i. Insert the supplied CD for the USB Adapter into the CD drive (not the KF COMM CD).
- ii. With the scale OFF plug in the USB cable from the scale into an open USB port on a PC. Turn on the scale and the computer should detect new hardware.
- iii. Different versions of Windows® have slightly different steps to load the driver that is on the CD. In all versions the NEW HARDWARE WIZARD guides you through the required steps to select the driver that is located on the CD.
- iv. NOTE: Windows® typically adds the virtual port in sequence after the highest number COM port. For example, on PC's equipped with up to 4 COM ports, the virtual port will be COM 5. When using the USB interface with programs that limit the number of COM port designations it may be necessary to assign one of these ports to the new virtual port. This can be done in the Port Settings of the Device Manager utility, found in the Windows® Control Panel.
- v. The computer should then inform you of the detection of the USB—Serial Adapter and the hardware is working properly.

\*From SCOUT Pro USB Interface Kit Manual

d. **KF COMM Software**

- i. Insert the KF COMM for Permeate Scale CD into the CD drive and double-click on the Setup icon if not automatically loaded.
- ii. You will be asked to select where you want the files to be displayed and stored.
- iii. Click Finish.

3. **Running the KF COMM Software**



a. **Software Versions & Operation**

The KF COMM software and data collection spreadsheet work the same as the version supplied with the Digital Pressure Monitor except the Permeate Mass is automatically collected. Both the Module Characteristics worksheet when doing Normalized Water Permeability (NWP) studies on the filter and the Trial Data worksheet when processing material have this feature.

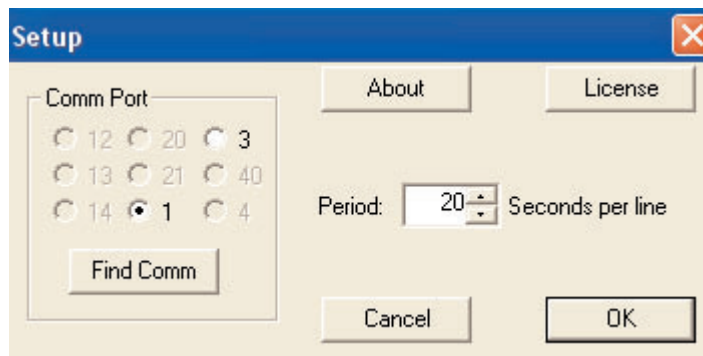
Note: For the major operations of the software and the theory and use of the different graphs please refer to the KrosFlo® Research II Pressure Monitor Manual provided with the monitor.

b. **COM Port Detection**

The COM ports for both the Pressure Monitor and the Permeate Scale will need to be detected in the Excel® spreadsheet.

i. Microsoft Office 97-2003 users

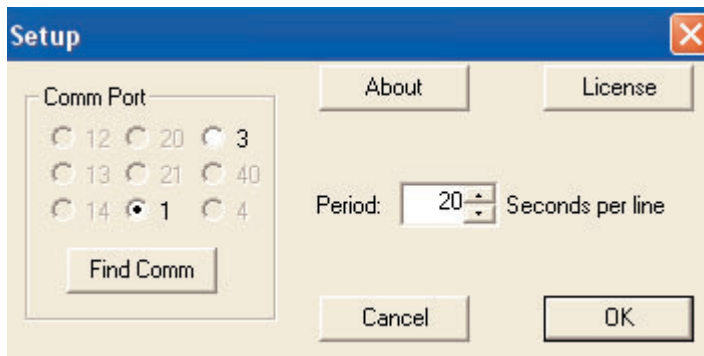
Click on the Tools icon in the toolbar or go to the Data menu and select the Configure Pressure Monitor or Configure Scale options. If the Tools icon is clicked the COM port settings of the Pressure Monitor will appear first (see example below). Click on the Find Comm tab if the pressure monitor is not detected and the system will search for the device. The sampling rate can also be set.



Once the COM port is detected for the Pressure Monitor click on the OK tab and then the COM port settings for the Permeate Scale will appear. If the COM port is not detected click on the Find Comm tab and the system will automatically search for the scale.

ii. Microsoft Office 2007 users

Click on the Add-Ins tab and expose the toolbar. Click the Configure Pressure Meter icon . Click on the Find Comm tab if the pressure monitor is not detected and the system will search for the device. The sampling rate can also be set. Repeat for the Configure Scale icon .



Note: The current time, inlet, retentate, permeate pressures, and scale measurements should be displayed in real time. If the readout on the pressure monitor or scale does not match the software, see the “Troubleshooting” section at the end of the manual.

c. Zeroing the Scale

The scale is automatically zeroed when the Start Collection button is pressed. Make sure that the permeate collection vessel and the permeate tubing are both in place when starting the data collection.

## 4. Troubleshooting

### a. COM Port Setting

- i. If the COM port cannot be detected for the Pressure Monitor or the Permeate Scale the Pressure Monitor Override or the Scale Override Excel® spreadsheets can be used respectively. These are provided on the CD and force the COM port to the correct setting. To do this open the file and change the COM port to the correct setting (seen in the Device Manager), save and close the file and reopen the spreadsheet and select yes when asked to force the COM setting.

### b. Driver Recognition

- i. If Windows® does not recognize the Permeate Scale USB signal or thinks that it is a different device, unplug the USB connector from the computer, turn off the scale and plug in the USB connector again. If the driver is still not recognized try loading the driver again and/or rebooting to reset the drivers.

## 5. Ordering Information

The KrosFlo Research II Permeate Scale can be used with the following system and accessories:

### KrosFlo® Research II TFF Systems

Part Number	Flow-path Type	Pump Capacity	Tubing	F/P Capacity
SYR2-X21-01N	MicroKros®	2.3 LPM, 110V	C-Flex 14	130 ml/min
SYR2-X22-01N	MicroKros®	2.3 LPM, 220V	C-Flex 14	130 ml/min
SYR2-D21-01N	MidiKros®	2.3 LPM, 110V	C-Flex 16	480 ml/min
SYR2-D22-01N	MidiKros®	2.3 LPM, 220V	C-Flex 16	480 ml/min
SYR2-S21-01N	MiniKros® Sampler Plus	2.3 LPM, 110V	C-Flex 17	1.7 L/min
SYR2-S22-01N	MiniKros® Sampler Plus	2.3 LPM, 220V	C-Flex 17	1.7 L/min

### System Components & Accessories

Part Number	Description
ACPM-201-01N	KrosFlo® Pressure Monitor, 110V; w/ alarm, auto shut-off, KF Comm, 3 transducers & RS232
ACPM-202-01N	KrosFlo® Pressure Monitor, 220V; w/ alarm, auto shut-off, KF Comm, 3 transducers & RS232
ACPM-499-03N	Disposable Pressure Transducer for KrosFlo® Pressure Monitor (3/pkg)
ACR2-021-01N	KrosFlo® Research II Pump, 2.3 LPM, 110V (pump head not included)
ACR2-022-01N	KrosFlo® Research II Pump, 2.3 LPM, 220V (pump head not included)
ACR2-SC4-01N	KrosFlo® Research II Permeate Scale with USB Cable and KF Comm software



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