

PACKING LIST

- ProteCol™ MicroFlow Meter
- PEEK Ferrule 1/16" ID pkt 5
- Adapter tube 1/16" to 1/32"
- Adapter tube 1/16" to fused silica
- Power supply 12V
- Adhesive strip
- Stainless Steel Outlet Tube 1/16" x 1/32 x 140 mm

WEB

Would you like to find out more about:

1. The latest innovations in LC capillary columns
2. Product Selection
3. Product Data Sheets and Instruction Manuals
4. Latest technical conference posters presented by SGE
5. SGE Technical Support centre for HELP

Then visit www.sge.com

Enter the keyword in the SGE search engine to easily find the information you require.



ProteCol™ MicroFlow Meter

Installation Procedure

INFORMATION

The ProteCol™ MicroFlow Meter is an accurate flow measurement tool for use with capillary column liquid chromatography. The MicroFlow Meter is designed to interface with all capillary tubing sizes and can be used to accurately measure and calibrate HPLC capillary systems.

The ProteCol™ MicroFlow Meter is guaranteed against faults in materials and workmanship for a period of twelve months from the date of invoice. The warranty implies free repair and/or replacement of defective goods, only upon written proof and (where authorized) return of the defective product.



WARRANTY

All SGE syringes are warranted to meet the stated quality and performance specifications and to be free of defects in material or workmanship. The warranty implies free replacement of a defective syringe only upon proper written proof of the defect and if requested by SGE, the return of the defective product in its original packaging. It does not apply to mishandling of product by the customer, either in storage or use.

AUSTRALIA & PACIFIC REGION

SGE Analytical Science Pty Ltd
Toll Free: 1800 800 167
Tel: +61 (0) 3 9837 4200
Fax: +61 (0) 3 9874 5672
Email: support@sge.com

CHINA

SGE Shanghai Representative Office
Tel: +86 21 6407 9382
Fax: +86 21 6407 9386
Email: china@sge.com

MIDDLE EAST

SGE Gulf
Tel: +971 6 557 3341
Fax: +971 6 557 3541
Email: gulfsupport@sge.com

EUROPE

SGE Europe Ltd
European Head Office
Toll Free: 00800 2790 8999
Toll Free Fax: 00800 2626 2609
Tel: +44 1908 568 844
Fax: +44 1908 566 790
Tel France: +33 1 69 29 80 90
Fax France: +33 1 69 29 09 25
Tel Germany: +49 (0) 6155 / 60746 0
Fax Germany: +49 (0) 6155 / 60746 50
Email: europe@sge.com

INDIA

SGE Laboratory Accessories Pvt Ltd
Tel: +91 22 24715896
Fax: +91 22 24716592
Email: sgeindia@vsnl.com

UNITED STATES OF AMERICA

SGE Incorporated
Toll Free: (800) 945 6154
Tel: +1 512 837 7190
Fax: +1 512 836 9159
Email: usa@sge.com

JAPAN

SGE Japan Inc
Tel: +81 45 222 2885
Fax: +81 45 222 2887
Email: japan@sge.com



INSTALLATION PROCEDURE

Mounting the ProteCol™ MicroFlow Meter

1. Clean the side of the MicroFlow Meter ① and the mounting surface with isopropanol (rubbing alcohol) or white spirits. Wipe lightly, allow to dry. Do not use household cleaners.
2. Remove the red Command™ Adhesive liner. Apply to the side of MicroFlow Meter. Press Firmly.
3. Remove black "wall side" liner. Position MicroFlow Meter to the surface in the desired location and press firmly for 30 seconds.
4. Ideally use a piece of tape at the top and bottom of the MicroFlow Meter in the positions ① indicated.

Connecting Capillary LC tubing to the ProteCol™ MicroFlow Meter inlet

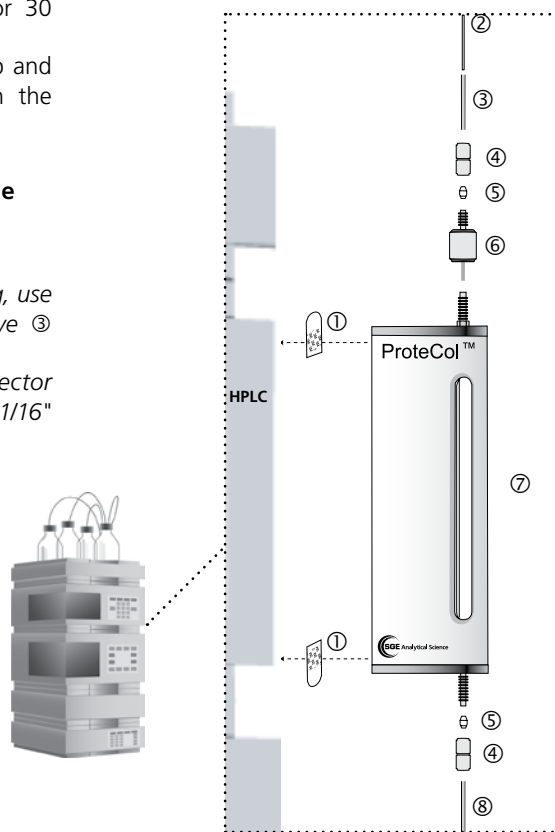
Note:

- For fused silica detector outlet tubing, use the Capillary to 1/16" adapter sleeve ③ (clear).
- For 1/32" PEEK or PEEKsil™ detector outlet tubing, use the 1/32" to 1/16" adapter sleeve ③ (beige).

5. Insert the detector tubing ② into the adapter sleeve ③ until it sits flush with the end of the sleeve.
6. Slide the nut ④ and ferrule ⑤ over the sleeve while holding the capillary tubing in the sleeve.
7. Insert the sleeve, detector tubing and ferrule into the top of the knurled inlet valve ⑥ until the sleeve and fused silica can not go any further.
8. Gently tighten the nut until the capillary tubing is firmly held in the sleeve.

Note:

Should liquid get into the Air Inlet Valve, the capillary forces within the valve will prevent the formation of a bubble for flow measurement. Disconnect the MicroFlow Meter from the LC system, drain the liquid out of the MicroFlow Meter and blow dry the air inlet valve at the top of the body of the MicroFlow Meter. Reassemble the MicroFlow Meter.



- | | |
|--|---------------------------------|
| ① Double sided tape | ⑤ Double sided ferrule |
| ② Capillary LC tubing | ⑥ Air Inlet Valve |
| ③ Capillary to 1/16" adapter or 1/32" to 1/16" adapter | ⑦ Graduated Flow Chamber |
| ④ Nut | ⑧ Stainless Steel Outlet Tubing |



Connecting 1/16" LC tubing to the ProteCol™ MicroFlow Meter inlet

1. Slide the nut ④ and ferrule ⑤ over the detector tubing and insert the tubing into the top of the knurled inlet valve ⑥. The adapter sleeve ③ is not required.
2. Gently tighten the nut until the 1/16" tubing is firmly in the MicroFlow Meter.

Connecting 1/16" waste outlet tubing to the ProteCol™ MicroFlow Meter

1. Slide the nut ④ and ferrule ⑤ over the stainless steel outlet tubing i, provided in the kit, and insert the tubing into the bottom (outlet) port of the MicroFlow Meter.
2. Gently tighten the nut until the 1/16" tubing is firmly in the MicroFlow Meter.

Connecting the Power Supply

Note:

The MicroFlow Meter power supply is a 12V tip positive DC supply. Do not connect any other type of power supply to the unit as damage may result.

1. Select the adapter to suit the power outlet to be used.
2. Connect the power supply to the power connector on the rear of the MicroFlow Meter.
3. Plug the power supply into the mains power outlet and switch on the MicroFlow Meter.

OPERATING PROCEDURE

1. Ensure that the stainless steel outlet tube is fully filled before opening the Air Inlet valve ⑥. The hydrostatic pressure is needed to avoid liquid rising into the air inlet valve.
2. Open and close the Air Inlet Valve ⑥ within one second to introduce a bubble into the flow chamber. At very low flows (<0.5µL/min), it could take up to 30 seconds for the air bubble to reach the top of the graduation on the tube.
3. Time the bubbles progress between the graduated marks printed on the flow chamber ⑦ with a stop watch.
4. Calculate the flow rate using the formula:

$$\frac{\text{volume that the bubble travelled } (\mu\text{L})}{\text{time to travel (sec) between the graduations}} \times 60 = \frac{\text{Flow Rate}}{(\mu\text{L/min})}$$