

# HPLC Liquid Flow Meter



## FlowCal 5000



The handy carrying case allows for convenient transportation as well as added protection.

# HPLC Liquid Flow Meter



- The ideal instrument for IQ/OQ/PQ and troubleshooting
- Accurate to 1% of reading with guaranteed linearity from 0.05 to 25.00 ml/min
- Durable and easy to use with any HPLC pump
- Easy diagnosis of leaking piston seals or malfunctioning check valves
- Automatic Data Transfer
  - o Dramatically simplify liquid flow rate data collection for HPLC IQ/OQ/PQ
  - o Collect flow rate data via RS232 or with a new optional battery powered mini printer

## Tovatech is pleased to introduce the FlowCal 5000

We are very excited about our newly designed flow meter for HPLC. These liquid flow meters have improved performance and a dramatic reduction in size and weight – one third the size and weight of the previous models!

The FlowCal 5000 digital liquid flowmeter accurately and reliably determines liquid flow. It is designed primarily as a flow meter for HPLC systems used at the end of a flow system where measured liquid is collected. Our latest liquid flow meter has the following improvements:

- \* New PEEK valve which is fitted with a soft elastomer seal and teflon diaphragm.
- \* The newly designed sensor head is more stable.
- \* The user replaceable inlet pipe - is made with a 1/16 inch diameter PEEK tube.
- \* New modern looking and light weight brushed aluminum case – the total unit now weighs only 12 ounces.

The new instrument measures liquid flow over a wide range, from 50 $\mu$ l/min to 25ml/min. You can see the working flow ranges and accuracy in the table below. Flow rate is measured by volume and is independent of the liquid type up to a viscosity of 10 centipoise.

The unit uses a single chip micro-controller, the flow rate (rounded to four digits) is displayed on a large four digit back-lit Liquid Crystal Display (LCD) and data can be conveniently output via the built-in RS232 interface to the full 6-digit reading. No user calibration is required; the unit is generally supplied gravimetrically calibrated at 1.0 (+10%) ml/min. Calibration at multiple points is available. All wetted parts are made of PTFE, PEEK, DAI-EL PERFLUOR or Pyrex glass. There are no wetted metallic parts.

### Three modes of operation are available:

- \* Printer Mode: liquid flow readings are displayed on the LCD and output to a printer if one is connected. A running average option is available in this mode
- \* Terminal Mode: in this mode the liquid flowmeter is controlled by the terminal or PC. Extra commands for averaging any number of readings are included.
- \* Test Mode: this mode allows the user to test the display, valve and RS232 interface and also display the calibration date.

### Liquid flow meter for these HPLC Brands:

* Waters	* Agilent	* Jasco
* Shimadzu	* Cecil Instruments	* Knauer
* Hitachi	* Thermo	* Dionex
* Perkin Elmer	* Varian	

The RS232 output allows the flowmeter to output data to any device fitted with an RS232 serial interface e.g. printer, terminal or personal computer. The unit is supplied with an RS232 cable fitted with a nine way female plug to connect directly to the COM port of a PC. By using the Terminal or Hyper-Terminal program supplied with MS Windows results can be collected and displayed or pasted into Excel or other programs to produce graphs or statistical analysis. The baud rate is internally switch selectable for 19200, 9600, 4800, 2400, 1200, 600, 300 baud with the option of sending a CR/LF after each reading. X-on / X-off handshaking is used.

### All instruments are supplied with the following:

- \* Mains 'wall block' power supply with a choice of 240v 3 pin UK, 230v 2 pin European or 100v 2 pin USA/Japan.
- \* RS232 input/output cable: 8way mini-din plug to PC COM port 9 pin female.
- \* UKAS traceable single point flow calibration certificate is supplied as standard (UKAS is the UK equivalent of NIST)
- \* Universal mounting kit: allows free standing mount, wall mounting, 'stack system' mounting and bottle top mount.
- \* Black plastic carrying case with foam inserts. All parts of the mounting kit are packed within the carrying case.
- \* Cleaning kit now supplied with the flow meter.

### FlowCal 5000 Specifications

- \* Reading Update Time
  - o 15 sec @ 2 ml/min
  - o 25 sec @ 1 ml/min
  - o 45 sec @ 0.5 ml/min
- \* Measuring Volume - 140  $\mu$ l
- \* Priming Volume - 250  $\mu$ l
- \* LCD Display - (12.7mm)- 4 digits and 3 status symbols
- \* RS232 output - (6 digits) XX.XXXX ml/min
- \* Size - 138mm x 76mm x 45mm
- \* Weight - 320g, 12 oz

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