

# Mechanical Flowmeter

## Operating Instructions

### General

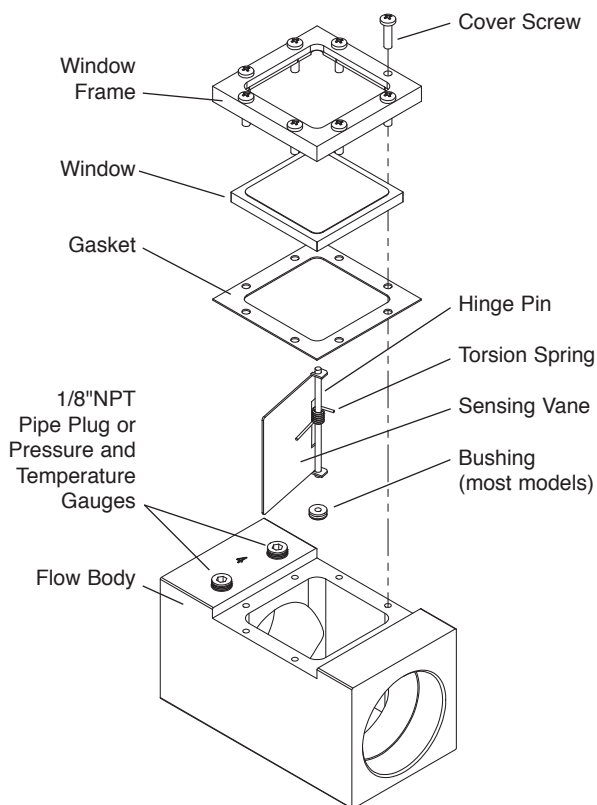
The Smartflow® large mechanical flowmeter provides visual indication of flow through a clear polysulfone viewing window. The vane indicator is physically pushed by the liquid indicating the flow rate printed on the viewing window.

### Specifications

Threaded Connection sizes.....3/4" - 3"  
Operating Temperature .....210°F (99°C) max.  
Max. Operating Pressure .....100 psi (6.9 bar)  
Accuracy.....±10% of full scale  
Pressure and Temperature Gauges Optional per part number

### Component Materials

Window.....Polysulfone  
Flow Body and Window Frame .....Anodized Aluminum  
Sensing Vane.....Stainless Steel  
Bushing.....Delrin  
Hinge Pin.....Stainless Steel  
Torsion Spring .....Stainless Steel  
Cover Screws.....Stainless Steel  
Gasket.....Neoprene



### Cleaning

Debris in the circulating system may cause the sensing vane to become lodged inside of the housing. Contact Burger & Brown Engineering for replacement parts or repair service. Clean the flowmeter as follows:

1. Remove the cover screws.
2. Remove the window frame and window.
3. Remove the sensing vane, hinge pin and spring assembly from the body by pulling up gently.
4. Clean the window with soap and water using a soft cloth or paper towel. Plastic polish may be used. **Do not clean with acetone. Do not clean with abrasives such as scouring powder or sandpaper which will scratch the clear finish.**
5. Remove the torsion spring and hinge pin. Wipe clean with a soft cloth or paper towel. **Do not lubricate these parts.**
6. Replace the gasket and any worn parts.
7. Re-assemble parts in reverse order of disassembly. Tighten cover screws in an alternating pattern.



4500 E 142nd St • Grandview, MO 64030 • Tel. (816) 878-6675 • Fax (816) 878-6680 • [www.smartflow-usa.com](http://www.smartflow-usa.com)

## Caution

- Use at temperatures above 130°F poses a serious personal injury hazard. Use extreme caution, protective clothing, or shielding around the system to minimize risk to personnel and nearby equipment.
- Accelerated chemical attack will result if flowmeters are used at elevated pressures and temperatures. Frequently inspect the body for cracking or crazing which may indicate chemical attack. Sudden failure and leakage can result from chemical attack. Consult the chemical compatibility list at right for substances that attack the polysulfone flowmeter window.
- Any liquid system offers the potential for accidental leakage. Leakage onto electrical or computer equipment could result in costly damage or personal injury. Do not locate piping systems where leakage might damage equipment or pose personal injury hazards. If it is impossible to avoid piping in such locations, use shielding to protect equipment and personnel.

## Chemical Compatibility

The following is a list of chemicals that are not compatible with the UDEL Polysulfone used in the Smartflow small flowmeter. Contact Burger & Brown Engineering for more detailed information.

Acetone, Methyl Ethyl Ketone	Benzene
Carbon Tetrachloride	Chlorobenzene
Chloroform	Cyclohexanone
Esters	Freon TA
Methylene Chloride	Tetrachloroethylene
1,1,2,2-Tetrachloroethane	Toluene
1,1,1-Trichloroethane	Trichloroethylene
Xylene	

Please contact us for further information.  
Burger & Brown Engineering, Inc.  
4500 E 142nd Street  
Grandview, Missouri, USA 64030  
Toll Free: 1-800-764-3518  
Tel: 816-878-6675  
Fax: 816-868-6680  
[www.smartflow-usa.com](http://www.smartflow-usa.com)

## Limited Warranty

Seller warrants that this product supplied will conform to the description herein stated and that the product will be of standard quality. This is the sole warranty made by Seller with respect to this product. Seller expressly disclaims any other express or implied warranties, including, but not limited to, the implied warranty of merchantability and the implied warranty of fitness for a particular purpose.

Seller shall not be liable for any cost or damages, whether direct, incidental or consequential, including, but not limited to, any injury, loss or damage resulting from the use of this product, regardless of whether any claim for such cost or damages is based on warranty, contract, negligence, tort or strict liability. The sole liability of Seller is limited to repairing or replacing this product.

This warranty shall not apply to any products that have been repaired or altered by anyone other than Seller. The warranty shall not apply to any products subject to misuse due to common negligence or accident, nor to any products manufactured by Seller which are not installed or operated in accordance with the printed instructions of Seller or which have been operated beyond the rated capacity of the goods. Seller states that the product's useful safe life is 5 years. Actual life may vary widely depending on operating environment such as temperature, pressure, and chemical exposure. Users are cautioned to refer to instructions for operating limits and a partial list of incompatible chemicals.