

# SMARTFLOW®

## TRACER<sup>®</sup> VM FLOWMETER

### General Description

The Tracer<sub>VM</sub> Flowmeter is a non-display sensor that provides a 0.5 to 3.5 Volt output for process flow rate and a 0.5 to 4.1 Volt output for process temperature.

Flow sensor technology is highly accurate and repeatable vortex shedding behind a bluff body. Flow reading is direction specific. Refer to the arrow on the body for correct installation.

Connection to the process is made using standard pipe threads in NPT or BSP from 3/8" through 1-1/2". Flow body materials are corrosion-resistant brass, nylon, anodized aluminum and stainless steel. Options are based on thread size, see page 2 for details.

The flowmeter is designed for use in industrial water applications such as injection mold cooling or filter and pump monitoring.

### Benefits

- No moving parts for reliable operation
- Flow and Temperature Sensors in one unit for compact installation
- Quick temperature response from direct media contact
- Economical and versatile construction with corrosion-resistant materials

### Specifications

#### Flow Ranges and Connection Sizes

<b>1 to 15 LPM</b>	(.3 to 4 GPM)	3/8" or 1/2"
<b>2 to 40 LPM</b>	(.5 to 10.6 GPM)	3/8" or 1/2"
<b>5 to 100 LPM</b>	(1.3 to 26.4 GPM)	3/4" or 1"
<b>10 to 200 LPM</b>	(2.6 to 52.8 GPM)	1" or 1-1/2"

Flow Accuracy .....±1.5% of Full Scale  
 Temperature Range..... 0°C to 100°C (32°F to 212°F)  
 High Temperature Models ..... 0°C to 120°C (32°F to 248°F)  
 Temperature Accuracy ..... ±0.5°C  
 Operating Pressure ..... 10.3 bar max. (150 psi max.)

#### Power

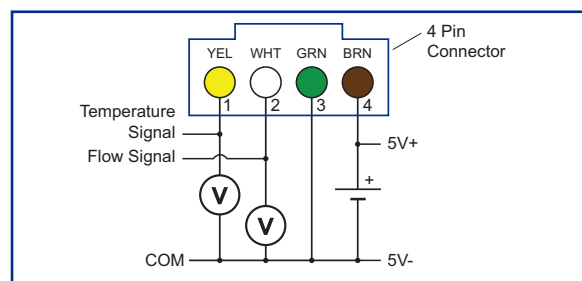
Power Supply ..... 5VDC ±5% (external)  
 Output Signals..... Ratiometric  
 Flow Signal..... 0.5 - 3.5V (zero at .35V)  
 Temperature Signal ..... 0.5 - 4.1V  
 Power Consumption ..... <50mW  
 Load Impedance..... >10kΩ

**burger & brown**  
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### Electrical Connections



Pin	Description	Color
1	Temperature Signal*	Yellow
2	Flow Signal*	White
3	Common (0V)	Green
4	Power Supply (+5VDC)	Brown

\*relative to Pin 3

### Materials

Sensing Element.. Silicone-Based MEMS Sensor  
 Seal (sensor to housing) ..... EPDM  
 Insert ..... PPA 40 GF  
 3/8" & 1/2" Body Size..... Glass-Filled Nylon Flow Body with Brass or Nylon End Caps  
 3/4" thru 1-1/2" Body Size ..... Anodized Aluminum or Stainless Steel Flow Body  
 Cable..... 2.9M (9.5ft) 4-conductor for power and output, ends stripped

### Power Supply Requirements

- 5VDC
- Separated from hazardous live circuitry by double or reinforced insulation
- Suggested current limit: 50-100mA

*Design and specifications are subject to change without notice.*



# Tracer<sup>®</sup> VM Electronic Flowmeters with Analog Voltage Output

## Model Number

**VM 3 - B - 15 - B - P1Q**

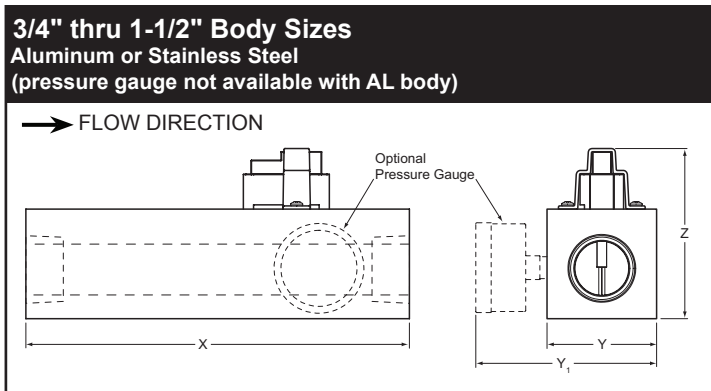
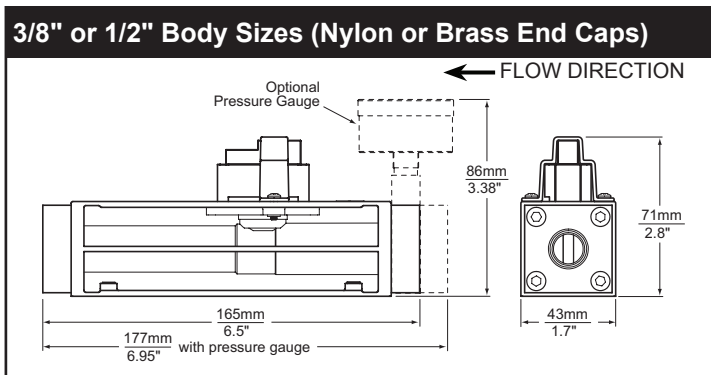
Body Size			
3/8"NPT	<b>3</b>		
3/8"BSPP	<b>3B</b>	<b>B or N</b>	<b>15 or 15H</b>
1/2"NPT	<b>4</b>		<b>40 or 40H</b>
1/2"BSPP	<b>4B</b>		
3/4"NPT	<b>6</b>	<b>AL or SS</b>	<b>100 or 100H</b>
3/4"BSPP	<b>6B</b>		
1"NPT	<b>8</b>	<b>AL or SS</b>	<b>100 or 100H</b> <b>200 or 200H</b>
1"BSPP	<b>8B</b>		
1-1/2"NPT	<b>12</b>	<b>AL or SS</b>	<b>200 or 200H</b>
1-1/2"BSPP	<b>12B</b>		

Body Material	
Glass-Filled Nylon with Brass End Caps Nylon End Caps (3/8" and 1/2" only)	<b>B</b> <b>N</b>
Anodized Aluminum Body Stainless Steel Body (3/4" and larger only)	<b>AL</b> <b>SS</b>

Flow Range	
1 to 15 LPM (.3 to 4 GPM)	<b>15</b>
High Temp 120°C max	<b>15H</b>
2 to 40 LPM (.5 to 10.6 GPM)	<b>40</b>
High Temp 120°C max	<b>40H</b>
5 to 100 LPM (1.3 to 26.4 GPM)	<b>100</b>
High Temp 120°C max	<b>100H</b>
10 to 200 LPM (2.6 to 52.8 GPM)	<b>200</b>
High Temp 120°C max	<b>200H</b>

100°C upper temperature limit unless noted

Options	
<b>P1</b>	30 psi Pressure Gauge
<b>P2</b>	60 psi Pressure Gauge
<b>P3</b>	100 psi Pressure Gauge
<b>P4</b>	160 psi Pressure Gauge (Pressure gauges not available with AL body material)
<b>Q</b>	Delta-Q <sup>®</sup> Precision Flow Regulator (use with VM3 or VM4 only)



**Dimensions (mm/inches)**

Body Size	X	Y	Y <sub>1</sub>	Z
3/4", 5 to 100 LPM	178/7.0	45.7/1.8	77/3.1	74/2.9
1", 5 to 100 LPM	178/7.0	45.7/1.8	77/3.1	74/2.9
1", 10 to 200 LPM	178/7.0	51/2.0	84/3.3	79/3.1
1-1/2", 10 to 200 LPM	198/7.8	58/2.3	90/3.6	86/3.4

### Directives

Flow sensors are in conformity with these Council directives on the approximation of the laws of the EC member states:

- Low Voltage Directive (2006/95/ED)  
Standards used: EN 61010-1:2001
- EMC Directive (2004/108/EC)  
Standards used: EN 61326-1:2006 and 61326-2-3:2006

Smartflow flow sensors fall under Article 3, 3 of PED Directive 97/23/EEC and are not required to be CE-marked according to this directive.