Principle of Operation:
The Parker Autoclave Engineers Micro-Metering Flow Control Valves are designed for modulating flow or pressure control in industrial and research applications at temperatures of 600°F (315°C) or below. Using our standard Micro-Metering valves configured for many different pressures and tube connection sizes, these valves are capable of very fine flow control with pressures up to 60,000 psi using an electric, multi-turn microprocessor controlled actuator. The combination of these two precision, high quality components, provide a superior low flow, high pressure control valve for use with either liquid or gas.

Electric Flow Control Valve Features:
The microprocess controlled motor guarantees optimum voltage, current and torque control when starting, running or stopping valve rotation. The microprocessor also assures accurate stem location and repeatability.

- Power Requirement: 24 VDC/50 Watt Minimum
- Control Input: 4-20 mA (200 ohm) or 0-10 VDC (18K ohm)
- Rotation Speed: 10 RPM (6 turn maximum)
- Operating Temperature: -20°F (-30°C) to 185°F (85°C)
- Two (2) foot lead cable supplied
- Anodized Aluminum Housing, Satin Anodized, IP65 (NEMA 4) Weatherproof

Note:
Minimum Flow is factory set and occurs at “0” position. Do Not Operate the valve below the zero position or damage WILL result. (Valve is only for metering flow and cannot be used to shut OFF flow.)
Electric Flow Control: Pressures to 60,000 psi (4137 bar)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Tube Outside Diameter Size (inches)</th>
<th>Connection Type</th>
<th>Orifice Size Inches (mm)</th>
<th>Rated ( C_v^* )</th>
<th>Pressure Rating psi (bar) @Room Temperature**</th>
</tr>
</thead>
<tbody>
<tr>
<td>10VRMM</td>
<td>1/8</td>
<td>W125</td>
<td>0.062 (1.57)</td>
<td>0.004</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>15PVRMM</td>
<td>1/4</td>
<td>NPT</td>
<td>0.062 (1.57)</td>
<td>0.004</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>30VRMM</td>
<td>1/4</td>
<td>F250C</td>
<td>0.062 (1.57)</td>
<td>0.004</td>
<td>30,000 (2069)</td>
</tr>
<tr>
<td>60VRMM</td>
<td>1/4</td>
<td>F250C</td>
<td>0.062 (1.57)</td>
<td>0.004</td>
<td>60,000 (4137)</td>
</tr>
<tr>
<td>60VRMM</td>
<td>3/8</td>
<td>F375C</td>
<td>0.062 (1.57)</td>
<td>0.004</td>
<td>60,000 (4137)</td>
</tr>
</tbody>
</table>

Notes
** For complete temperature ratings see pressure/temperature rating guide in Technical Information section.

Micro-Metering Needle Valve Feature:
For detailed product description see VRMM MicroMetering Series brochure.
- Barrel and Thimble provided visual feedback of position
- 25 Thimble divisions each representing 0.001" of stem travel
- One revolution = 0.025" stem travel
- UNS S31600/S31603, 316/316L Stainless Steel body material
- Connection types, pressure and sizes change by model type
- Temperature Range: -100ºF to 600ºF (-73º to 315ºC) with options
- Replaceable Seat has two seat sides 180º apart

Ordering Information:

<table>
<thead>
<tr>
<th>Model</th>
<th>Control Input</th>
<th>Number Rotations</th>
<th>Controller RPMs</th>
<th>See Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>10VRMM2812-C4</td>
<td>4-20 mA</td>
<td>6</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>10VRMM2812-C10</td>
<td>0-10 VDC</td>
<td>6</td>
<td>10</td>
<td>1</td>
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<tr>
<td>15PVRMM4812-C4</td>
<td>4-20 mA</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>15PVRMM4812-C10</td>
<td>0-10 VDC</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>30VRMM4812-C4</td>
<td>4-20 mA</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>30VRMM4812-C10</td>
<td>0-10 VDC</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM4812-C4</td>
<td>4-20 mA</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM4812-C10</td>
<td>0-10 VDC</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM6812-C4</td>
<td>4-20 mA</td>
<td>6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM6812-C10</td>
<td>0-10 VDC</td>
<td>6</td>
<td>10</td>
<td>2</td>
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</table>

Note: For micrometering valve details see needle valve section.
Electric Flow Control Pressures to 60,000 psi (4137 bar)

Dimensional Information:

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Outside Diameter Tube</th>
<th>Orifice Diameter</th>
<th>Dimension Data - Inches (mm)</th>
<th>Block Thickness</th>
<th>See Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>10VRMM2812-C4</td>
<td>1/8 (3)</td>
<td>.062 (2)</td>
<td>A 1.50 B .88 C .31 D .94 E 1.56 F 4.50 J 4.75 K .75</td>
<td>.75</td>
<td>1</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15PVRMM4812-C4</td>
<td>1/4 Pipe</td>
<td>.062 (2)</td>
<td>A 2.00 B 1.00 C NA D 1.12 E 2.16 F 3.50 J 4.75 K 3.50</td>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>15PVRMM4812-C10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30VRMM4812-C4</td>
<td>1/4 (6)</td>
<td>.062 (2)</td>
<td>A 2.00 B 1.00 C .50 D 1.12 E 2.00 F 3.50 J 4.75 K 3.50</td>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>30VRMM4812-C10</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60VRMM4812-C4</td>
<td>1/4 (6)</td>
<td>.062 (2)</td>
<td>A 2.00 B 1.00 C .50 D 1.31 E 2.63 F 3.50 J 8.30 K 4.10</td>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM4812-C10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60VRMM6812-C4</td>
<td>3/8 (10)</td>
<td>.062 (2)</td>
<td>A 2.00 B 1.00 C .53 D 1.31 E 2.63 F 3.50 J 8.30 K 4.10</td>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>60VRMM6812-C10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Distance gland extends

15PVRMM/30VRMM/60VRMM

10VRMM

Mounting Dimensions View A

Figure 1

60VRMM

Mounting Dimensions

Figure 2

Note: Minimum Flow is factory set and occurs at “0” position. Do Not Operate the valve below the zero position or damage WILL result.
Electric Flow Control: Pressures to 60,000 psi (4137 bar)

Valve Packing Options:

Standard Parker Autoclave Engineers 10VRMM, 15PVRMM, and 30VRMM series valves with PTFE packing may be operated from 0° to 450°F (-18° to 232°C). 60VRMM series has nylon/leather/nylon packing and may be operated from 40° F (4°C) to 230°F (110°C). Optional packing or trim material available by adding the following suffixes to catalog order number.†

Suffix: **TG** for standard valve with PTFE glass packing, 0° to 600°F (-18° to 316°C).

**B** for standard valve with cryogenic trim materials and PTFE packing for temperatures below 0°F (-18°C) to -100°F (-73°C).

† Parker Autoclave Engineers does not recommend compression sleeve connections below 0°F (-18°C) or above 650°F (343°C). For additional valve options, contact your Sales Representative.

**Note:** See Needle Valve options for stem and seat coatings for erosive service. Metering valve not to be used as a shutoff valve. Minimum Flow is factory set and occurs at “0” position. Do Not Operate the valve below the zero position or damage WILL result.

Valve Maintenance:

VRMM Valve & Electric actuator is not user serviceable and must be returned to factory for repair. (Contact Repair Department at IPDAECRR@parker.com for ATR prior to shipment.)

Electric Flow Control Actuator Assembly/Wiring:

(Drawing is typical and varies in size across different models)

<table>
<thead>
<tr>
<th>Description</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power: +24 VDC</td>
<td>Red</td>
</tr>
<tr>
<td>Signal Input: + Positive (4-20mA or 0-10 VDC)</td>
<td>Brown</td>
</tr>
<tr>
<td>Return: - Negative</td>
<td>Black</td>
</tr>
<tr>
<td>Earth Ground:</td>
<td>Connected to Actuator Chassis Only</td>
</tr>
</tbody>
</table>

Wiring Diagram:

![Electric Flow Control Wiring Diagram](image-url)
NOTES:

High Pressure Valves • Fittings • Tubing to 150,000 psi.

Reactors • Vessels Instrumentation

Air Driven, High Flow, High Pressure Liquid Pumps

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---

<table>
<thead>
<tr>
<th>MARKET</th>
<th>KEY MARKETS</th>
<th>KEY PRODUCTS</th>
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</thead>
<tbody>
<tr>
<td>CLIMATE CONTROL</td>
<td>Agriculture Food, Beverage and Dairy Precision Cooling Transportation</td>
<td>Co2 Controls Electronic Controllers Filter Drives Hand Shut-Off Valves Hose &amp; Fittings Pressure Regulating Valves Refrigerant Distributors Safety Relief Valves Solenoid Valves Thermostatic Expansion Valves</td>
</tr>
<tr>
<td>FLUID and</td>
<td>Aerospace Agriculture Bulk Chemical Handling Construction Machinery Food &amp; Beverage Fuel &amp; Gas Delivery</td>
<td>Industrial Machinery Mobile Oil &amp; Gas Transportation Welding Brass Fittings &amp; Valves Diagnostic Equipment Fluid Conveyance Systems Industrial Hose PTFE &amp; FPA Hose, Tubing &amp; Plastic Fittings Rubber &amp; Thermoplastic Hose &amp; Couplings Tube Fittings &amp; Adapters Quick Disconnects</td>
</tr>
<tr>
<td>GAS HANDLING</td>
<td>Aerospace Agriculture Bulk Chemical Handling Construction Machinery Food &amp; Beverage Fuel &amp; Gas Delivery</td>
<td>Aerospace Agriculture Bulk Chemical Handling Construction Machinery Food &amp; Beverage Fuel &amp; Gas Delivery</td>
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<tr>
<td>HYDRAULICS</td>
<td>Aerospace Aerial lift Agriculture Construction Machinery Forestry</td>
<td>Industrial Machinery Mining Oil &amp; Gas Power Generation &amp; Energy Truck Hydraulics Diagnostic Equipment Hydraulic Cylinders &amp; Accumulators Hydraulic Motors &amp; Pumps Hydraulic Systems Hydraulic Valves &amp; Controls Power Take-Offs Rubber &amp; Thermoplastic Hose &amp; Couplings Tube Fittings &amp; Adapters Quick Disconnects</td>
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<tr>
<td>SEALING and</td>
<td>Aerospace Chemical Processing Consumer Energy, Oil &amp; Gas Fluid Power General Industrial</td>
<td>Aerospace Chemical Processing Consumer Energy, Oil &amp; Gas Fluid Power General Industrial</td>
</tr>
<tr>
<td>SHIELDING</td>
<td>Aerospace Chemical Processing Consumer Energy, Oil &amp; Gas Fluid Power General Industrial</td>
<td>Aerospace Chemical Processing Consumer Energy, Oil &amp; Gas Fluid Power General Industrial</td>
</tr>
</tbody>
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July 2018

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