

# PULSAtron®

## Series MP

## Electronic Metering Pumps



### Key Features

- **Automatic Control**, 4-20mA and 20-4mA current signals can be ratioed from 100% to 2% of incoming signal.
- **Flow Verification** on select sizes can disable the pump and activate alarm if flow is interrupted for any reason.
- **Flow Totalization** accurately reports the volume of chemical pumped at the touch of a button in either Gallons or Liters. Factory preset to pump rating, manual calibration volume can be input to fine tune reporting.
- **Relay Output** for computer interface or AC power allows for external control.
- **Simple Prompts** in plain language allow for easy-to-understand instructions for programming. Available in four languages, English, French, German and Spanish.
- **Alarm Signals** for signal loss, full count, circuit failure, pulse overflow and pulse rate high. Liquid low level indicator capability is standard.
- **Timed Sequences** can be set for selected intervals and rate for repetitive metering.
- **Pulse Signals** can be multiplied or divided by 1 to 999 allowing for pumps to handle peak requirements.
- **Flow Rate** is displayed as GPH, GPD or LPH.
- **Large easy to read backlit LCD** display keeps you informed with the data that you need.

### Complete Economical Selection

Nineteen distinct models are available, having pressure capabilities to 300 PSIG @ 3 GPD, and flow capacities to 504 GPD @ 20 PSIG, with a turndown ratio of 1000:1. Metering performance is reproducible to within  $\pm 2\%$  of maximum capacity.

### Operating Benefits

**Reliable metering performance.** Our guided check valves, with their state-of-the-art seat and ball designs, provide precise seating, and excellent priming and suction lift characteristics. Our timing circuit is highly reliable and, by design, virtually unaffected by temperature, EMI and other electrical disturbances.

**Rated "hot" for continuous duty.** Series MP pumps continue to meet their specifications for pressure and capacity even during extended use. That's because of our high quality solenoid and special enclosure that effectively dissipates heat.

**High viscosity capability.** A straight flow path and ample clearance between the diaphragm and head enable standard PULSAtron pumps to handle viscous chemicals up to a viscosity of 3000 CPS. For higher viscosity applications, larger, spring-loaded connections are available.

**Leak-free, sealless, liquid end.** Our diaphragms are of superior construction—PTFE-faced, bonded to a composite of Hypalon and fabric layers, and reinforced with a metal insert for optimum flexibility and durability.

### System Compatibility

**A wide variety of chemicals can be pumped.**

Liquid end materials include glass-filled polypropylene (GFPP), PVC, Polyvinylidene Fluoride (PVDF), PTFE, Hypalon, Viton, ceramic, alloys and 316SS.

### Immediate installation and start-up.

Included as standard accessories with all models are an injection/back pressure valve assembly and a foot valve/strainer assembly\*, including discharge and suction tubing (\*not avail. with high viscosity connections for >3000 CPS).

### Safe and easy priming and valve maintenance.

Included as a standard accessory is a bleed valve assembly, including return tubing (available only on those models with tubing connections and  $\leq 240$  GPD).

### Quick and economical liquid end maintenance.

Available for every model is a unique KOPkit®, a convenient, economically priced, package containing new cartridge check valves and other important spare parts.



For additional information about PULSAtron's full-featured Series E PLUS refer to Technical Sheet No. EMP-021, about the mid-range Series E, Series D & Series A PLUS refer to Technical Sheet No. EMP-022, EMP-023 & EMP-025. For information about the economical Series C PLUS & Series C, refer to Technical Sheet No. EMP-026 & EMP-024.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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# PULSAtron Series MP Specifications

## Pressure and Flow Rate Capacity

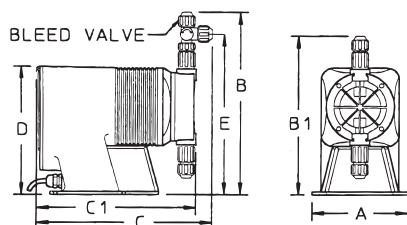
| MODEL                                         |        | LMK2                                                                                                                                                                                                                                           | LMB2 | LMA2 | LMD3 | LMB3 | LMA3 | LMK3 | LMF4 | LMD4 | LMB4 | LMH4 | LMG4 | LME4                          | LMK5 | LMH5 | LMH6 | LMK7 | LMH7  | LMH8  |
|-----------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|-------------------------------|------|------|------|------|-------|-------|
| Capacity nominal (max.)                       | GPH    | 0.13                                                                                                                                                                                                                                           | 0.21 | 0.25 | 0.50 | 0.50 | 0.50 | 0.60 | 0.85 | 0.90 | 1.00 | 1.70 | 1.75 | 1.85                          | 2.50 | 3.15 | 5.00 | 8.00 | 10.00 | 21.00 |
|                                               | GPD    | 3                                                                                                                                                                                                                                              | 5    | 6    | 12   | 12   | 12   | 14   | 20   | 22   | 24   | 41   | 42   | 44                            | 60   | 76   | 120  | 192  | 240   | 504   |
|                                               | LPH    | 0.5                                                                                                                                                                                                                                            | 0.8  | 0.9  | 1.9  | 1.9  | 1.9  | 2.3  | 3.2  | 3.4  | 3.8  | 6.4  | 6.6  | 7.0                           | 9.5  | 11.9 | 18.9 | 30.3 | 37.9  | 79.5  |
| Pressure (max.)                               | PSIG   | 300                                                                                                                                                                                                                                            | 250  | 150  | 250  | 150  | 100  | 100  | 250  | 150  | 100  | 250  | 150  | 100                           | 150  | 150  | 100  | 50   | 35    | 20    |
|                                               | BAR    | 21                                                                                                                                                                                                                                             | 17   | 10   | 17   | 10   | 7    | 7    | 17   | 10   | 7    | 17   | 10   | 7                             | 10   | 10   | 7    | 3.3  | 2.4   | 1.3   |
| Connections                                   | Tubing | 1/4" ID X 3/8" OD                                                                                                                                                                                                                              |      |      |      |      |      |      |      |      |      |      |      | 3/8" ID X 1/2" OD             |      |      |      |      |       |       |
|                                               |        | 3/8" ID X 1/2" OD                                                                                                                                                                                                                              |      |      |      |      |      |      |      |      |      |      |      | 1/2" ID X 3/4" OD (LPH8 ONLY) |      |      |      |      |       |       |
|                                               |        | 3/16" ID X 5/16" OD                                                                                                                                                                                                                            |      |      |      |      |      |      |      |      |      |      |      | FLOW VERIFICATION (See Note)  |      |      |      |      |       |       |
|                                               | Piping | 1/4" FNPT                                                                                                                                                                                                                                      |      |      |      |      |      |      |      |      |      |      |      | 1/4" FNPT                     |      |      |      |      |       |       |
|                                               |        | 1/2" FNPT                                                                                                                                                                                                                                      |      |      |      |      |      |      |      |      |      |      |      | 1/2" FNPT                     |      |      |      |      |       |       |
| Reproducibility                               |        | +/- 2% at maximum capacity                                                                                                                                                                                                                     |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Viscosity Max CPS                             |        | For viscosity up to 3000 CPS, select connection size 3, 4, B or C with 316SS ball material. Flow rate will determine connection/ball size. Greater than 3000 CPS require spring loaded ball checks. See Selection Guide for proper connection. |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Controls                                      |        | 6-Station Membrane Switch                                                                                                                                                                                                                      |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Status Display                                |        | High Resolution Backlit LCD                                                                                                                                                                                                                    |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| LED Indicator Lights, Panel Mount             |        | Power On - Green, Pulsing - Green Flashing, Stop - Red                                                                                                                                                                                         |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Stroke Frequency                              |        | 125 Strokes Per Minute (SPM) maximum                                                                                                                                                                                                           |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| External Stroke Frequency Control (Automatic) |        | 4-20 mADC, 20-4 mADC External Pacing                                                                                                                                                                                                           |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Output Relay (Signal Level Option)            |        | 24 VDC, 10 mA                                                                                                                                                                                                                                  |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Output Relay (Power Option)                   |        | 250 VAC, 50/60 HZ, 0.5A                                                                                                                                                                                                                        |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Stroke Frequency Turn-Down Ratio              |        | 100:1                                                                                                                                                                                                                                          |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Stroke Length Turn-Down Ratio                 |        | 10:1                                                                                                                                                                                                                                           |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Power Input                                   |        | 115 VAC/50-60 HZ/1 ph<br>230 VAC/50-60 HZ/1 ph                                                                                                                                                                                                 |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Average Current Draw                          |        | 1.0 Amps @ 115 VAC, 0.5 Amps @ 230 VAC                                                                                                                                                                                                         |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Peak Input Power                              |        | 300 Watts                                                                                                                                                                                                                                      |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |
| Average Input Power @ max SPM                 |        | 130 Watts                                                                                                                                                                                                                                      |      |      |      |      |      |      |      |      |      |      |      |                               |      |      |      |      |       |       |

**Note:** Flow Verification: Available on K3, B4 and E4 with connection code 1; H6, K7 and H7 with connection code H; 1/4" ID x 3/8" OD only.

## Liquid End Materials

| Series | Pump Head                     | Diaphragm                    | Check Valves               |                                        | Fittings             | Bleed Valves                                            | Injection Valve Assembly Foot Valve Assembly | Tubing                |
|--------|-------------------------------|------------------------------|----------------------------|----------------------------------------|----------------------|---------------------------------------------------------|----------------------------------------------|-----------------------|
|        |                               |                              | Seats/O-Rings              | Balls                                  |                      |                                                         |                                              |                       |
| MP     | GFPPL<br>PVC<br>PDVF<br>316SS | PTFE-faced<br>Hypalon-backed | PTFE,<br>Hypalon,<br>Viton | Ceramic,<br>PTFE,<br>316 SS<br>Alloy C | GFPPL<br>PVC<br>PVDF | Same as fitting and check valve selected, except 316 SS | Same as fitting and check valve selected     | Clear PVC<br>White PE |

## Dimensions



| Series MP Dimensions (inches) |     |      |    |      |    |     |     |         |           |     |      |      |      |      |     |      |         |
|-------------------------------|-----|------|----|------|----|-----|-----|---------|-----------|-----|------|------|------|------|-----|------|---------|
| Model No.                     | A   | B    | B1 | C    | C1 | D   | E   | Shpg Wt | Model No. | A   | B    | B1   | C    | C1   | D   | E    | Shpg Wt |
| LMA2                          | 5.4 | 10.3 | -  | 10.8 | -  | 7.5 | 8.9 | 13      | LMH4      | 6.2 | 10.9 | -    | 11.2 | -    | 8.2 | 9.5  | 21      |
| LMA3                          | 5.4 | 10.6 | -  | 10.7 | -  | 7.5 | 9.2 | 13      | LMH5      | 6.2 | 11.3 | -    | 11.2 | -    | 8.2 | 9.9  | 21      |
| LMB2                          | 5.4 | 10.3 | -  | 10.8 | -  | 7.5 | 8.9 | 13      | LMH6      | 6.2 | 11.3 | -    | 11.2 | -    | 8.2 | 9.9  | 21      |
| LMB3                          | 5.4 | 10.6 | -  | 10.7 | -  | 7.5 | 9.2 | 13      | LMH7      | 6.1 | 11.7 | -    | 11.2 | -    | 8.2 | 10.3 | 21      |
| LMB4                          | 5.4 | 10.6 | -  | 10.7 | -  | 7.5 | 9.2 | 13      | LMH8*     | 6.1 | -    | 10.9 | -    | 10.6 | 8.2 | -    | 25      |
| LMD3                          | 5.4 | 10.6 | -  | 11.2 | -  | 7.5 | 9.2 | 15      | LMK2      | 5.4 | 10.3 | -    | 10.8 | -    | 7.5 | 8.9  | 13      |
| LMD4                          | 5.4 | 10.6 | -  | 11.2 | -  | 7.5 | 9.2 | 15      | LMK3      | 5.4 | 10.6 | -    | 10.7 | -    | 7.5 | 9.2  | 13      |
| LME4                          | 5.4 | 10.6 | -  | 11.2 | -  | 7.5 | 9.2 | 15      | LMK5      | 5.4 | 10.9 | -    | 11.7 | -    | 7.5 | 9.5  | 18      |
| LMF4                          | 5.4 | 10.6 | -  | 11.7 | -  | 7.5 | 9.2 | 18      | LMK7      | 6.1 | 11.7 | -    | 11.2 | -    | 8.2 | 10.3 | 21      |
| LMG4                          | 5.4 | 10.6 | -  | 11.7 | -  | 7.5 | 9.2 | 18      |           |     |      |      |      |      |     |      |         |

NOTE: Inches X 2.54 = cm  
\* the LMH8 is designed without a bleed valve available



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