

PULSAFEEDER®

The BLACKLINE Series MD is a motor driven, spring return mechanical diaphragm metering pump for precise and accurate metering control. With many standard features, the Series MD includes oil lubricated ball bearings in a die-cast aluminum housing, long life reinforced PTFE diaphragm, micrometer style stroke length adjuster and many liquid end material options to suit any application.

Nine distinct models are available, having flow capabilities to 132 GPH (500 LPH) and pressures to 150 PSI (10 BAR), with a standard turndown ratio of 10:1 or up to 100:1 with the optional VFD Vector Drive. Metering performance is reproducible to within $\pm 2\%$ of maximum capacity.

Standard Features

- Liquid End Materials – GFPP, 316 SS & PVDF.
- Rugged double-sided PTFE faced, long life diaphragm.
- Oil lubricated ball bearings in die-cast aluminum housing.
- Manual micrometer style stroke adjustment; 10:1 turndown, up to 100:1 with VFD Vector.
- Standard NEMA 56C or IEC71 motor frames available.

Optional Features

- Variable Frequency Drive for Automatic Control.
 - ❖ Fully Scalable 4-20mA, 0-10VDC signals.
 - ❖ NEMA 4X Enclosure.
- ATEX Group II, Category 3 – Zone 2/22 for non-flammable liquids with proper motor selection.

Controls



Manual or Automatic Stroke Length

- Turn-Down Ratio 10:1



VFD Stroke Rate

- Turn-Down Ratio 10:1
- 4-20mA or 0-10VDC Input

Operating Benefits

- Reliable metering performance.
- Highly efficient operation.
- High viscosity capability.
 - ❖ Up to 1000 CPS
- Leak-free, seal-less, liquid end.



Aftermarket

- KOPkits
- Gauges
- Dampeners
- Pressure Relief Valves
- Tanks
- Pre-Engineered Systems
- Process Controllers- MicroVision



BLACK
LINE Series MD
Mechanical Diaphragm Pumps

BLACK LINE Series MD

Specifications and Model Selection

MODEL		MD1A	MD1B	MD1C	MD1D	MD1E	MD2F	MD2G	MD2H	MD3G
Capacity nominal (max.)	GPH	7	14	22	29	35	59	79	98	132
	LPH	26	53	83	110	132	223	299	371	500
Pressure (max.)	PSIG	150	150	150	150	150	90	90	75	75
	BAR	10	10	10	10	10	6	6	5	5
Strokes/Minute	SPM	84	60	84	116	138	84	118	138	118
Viscosity	CPS	1000			500		1000	500		
Connections:	FNPT	1/2"				3/4"		1"		
	BSPT-F	1/2"				3/4"		1"		

Engineering Data

Liquid End Materials Available:

GFPPL Head & Valves
PVDF Head & Valves
316 SS Head & valves

Valve Seat Materials:

PVC on GFPPL Liquid End
PTFE on PVDF Liquid End
316 SS on 316 SS Liquid End
Incoloy (Optional Construction)

Valve Check Ball Materials:

Pyrex on GFPPL and PVDF Liquid End
316 SS on 316SS Liquid End
Hastelloy C-276 (Optional Construction)

Important: Material Code - GFPPL=Glass-filled Polypropylene,
PVDF=Polyvinylidene Fluoride.

Engineering Data

Reproducibility:

+/- 2% at maximum capacity
up to 1000 CPS

Viscosity Max CPS:

Stroke Frequency Max SPM:

60 to 138 Strokes Per Minute
max. (Depending on model
selection)

Stroke Length Turn-Down Ratio:

10:1

Power Input:

115 VAC/60 Hz/1 ph
230 VAC/50-60 Hz/1 ph or 3 ph

Max Ambient Temperature:

104°F (40°C)

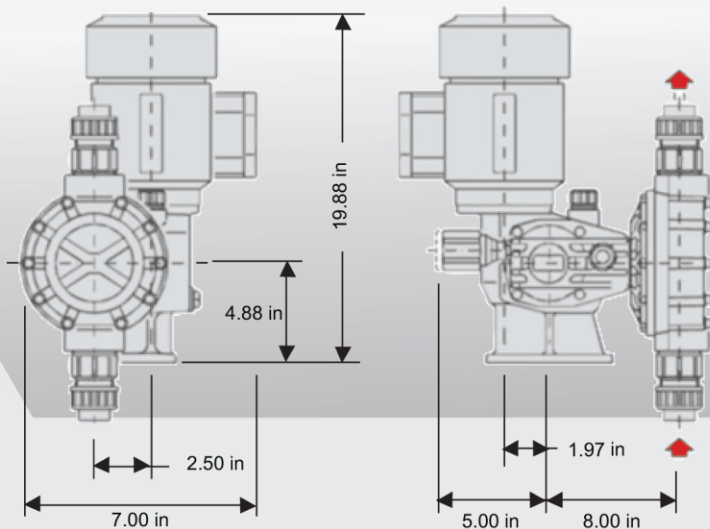
Max Fluid Temperature:

104°F (40°C)

Oil Capacity:

15.2 oz (0.4 L)

Dimensions



Series MD Dimensions (inches)

Model	Box Dimensions	Weight Plastic (lbs)	Weight Stainless Steel (lbs)
MD1A (NO MOTOR)	19 x 19 x 10	21.5	26.0
MD1B (NO MOTOR)	20 x 19 x 10	21.5	26.0
MD1C (NO MOTOR)	21 x 19 x 10	21.5	26.0
MD1D (NO MOTOR)	22 x 19 x 10	21.5	26.0
MD1E (NO MOTOR)	23 x 19 x 10	21.5	26.0
MD2F (NO MOTOR)	24 x 19 x 10	26.0	37.0
MD2G (NO MOTOR)	25 x 19 x 10	26.0	37.0
MD2H (NO MOTOR)	26 x 19 x 10	26.0	37.0
MD3G (NO MOTOR)	27 x 19 x 10	29.0	46.0
MD1A WVF&D & MOTOR	27 x 17.4 x 18.75	67.0	71.5
MD1B WVF&D & MOTOR	28 x 17.4 x 18.75	67.0	71.5
MD1C WVF&D & MOTOR	29 x 17.4 x 18.75	67.0	71.5
MD1D WVF&D & MOTOR	30 x 17.4 x 18.75	67.0	71.5
MD1E WVF&D & MOTOR	31 x 17.4 x 18.75	67.0	71.5
MD2F WVF&D & MOTOR	32 x 17.4 x 18.75	71.5	82.5
MD2G WVF&D & MOTOR	33 x 17.4 x 18.75	72.5	83.5
MD2H WVF&D & MOTOR	34 x 17.4 x 18.75	73.5	84.5
MD3G WVF&D & MOTOR	35 x 17.4 x 18.75	74.5	91.5



27101 Airport Road
Punta Gorda, FL 33982
Phone: ++1(941) 575-3800
Fax: ++1(941) 575-4085

www.pulsatron.com



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