

# Low Flow Mag Meters

The Chemline EM Series Electromagnetic flow meter is a full port small diameter design for low flows. It accurately measures pulsating flows from diaphragm type chemical metering pumps. Successful applications in the waste/water industry include sodium hypochlorite, ferric chloride and flocculating agents. The flow tube is solid PVDF with platinum coated titanium electrodes.

Available control outputs include pulse, 4 – 20 mA and an LCD display for flow rate and total flow plus high and low flow alarm relays. EM Series meters do not need to be recalibrated every time a new chemical is added to the injection process. These units offer the same high accuracy and reliability as equivalent metal alloy meters at lower cost.

## Features

### Ideal for Dosing Systems

- Accurately measures pulsating flow
- Accuracy ± 1% of reading, plus 0.05 gpm (0.02 l/min.)

### High Chemical and Abrasion Resistance

- Full port, solid PVDF flow tube
- Platinum coated titanium electrodes

### Low Cost

- Significant savings versus similar metal alloy mag meters

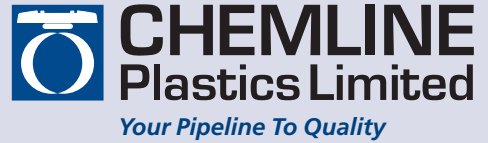
### Three Models offer a Choice of Output Functions

	EM-100	EM-102	EM-101
Pulse Output	✓	✓	✓
4 – 20 mA Output		✓	✓*
LCD Display for Flow Rate and Total Flow			✓
Maximum & Minimum Alarms			✓

\* EM-101 offers choice of 4 – 20 mA or 0 – 5 VDC.

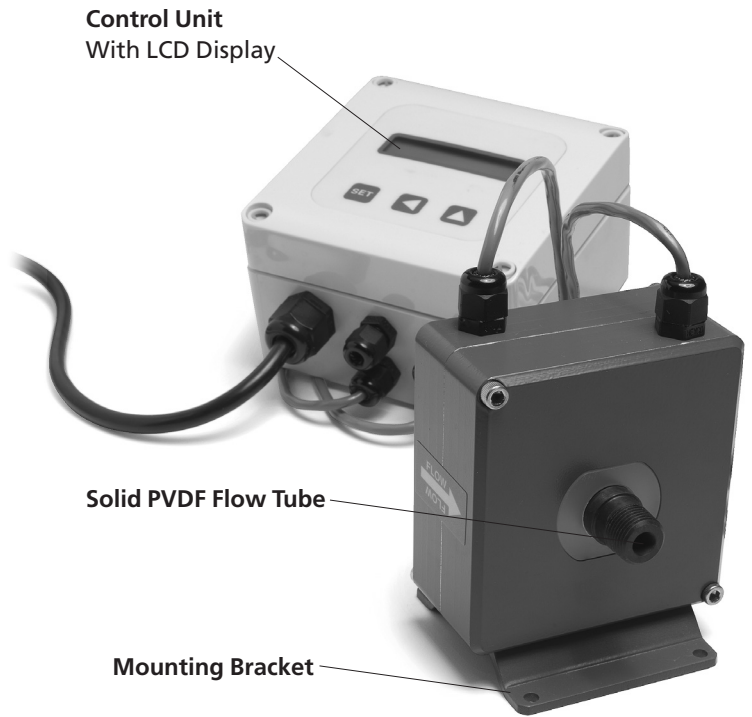


EM 100 and EM 102 Models



## Low Flow Electromagnetic Flow Meters

<b>SERIES:</b>	EM
<b>SIZES:</b>	1/4", 3/8"
<b>FLOW:</b>	0.1–1 or 0.3–3 USGPM
<b>ENDS:</b>	Male NPT as Standard†
<b>FLOW TUBE:</b>	PVDF**
<b>SEALS:</b>	EPDM or FKM (Viton®)††



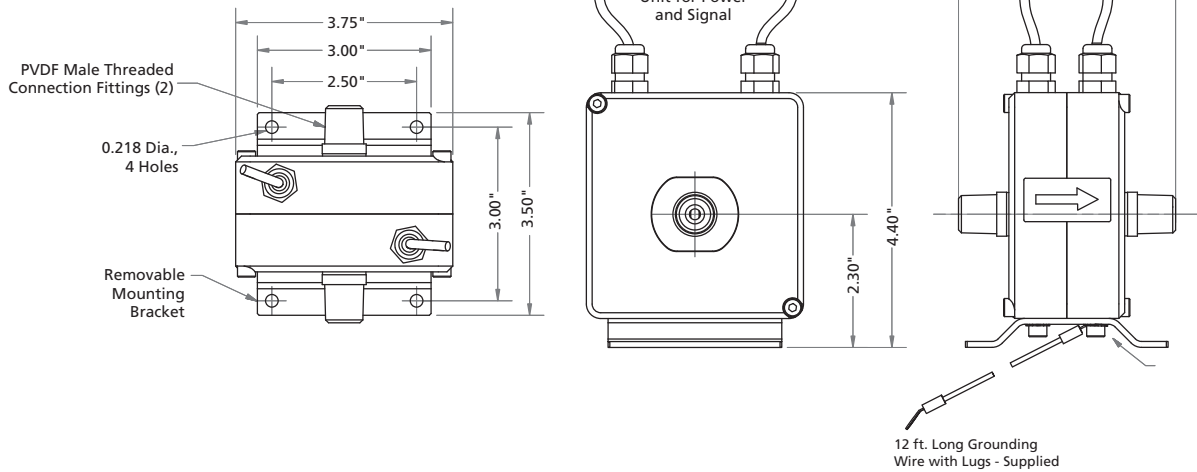
EM 101 Model

† End connections other than male threaded are available.  
 †† Seals are static internal o-rings. Alternative materials are available.  
 \*\* 1/4" and 3/8" sizes have conductive black PVDF flow tubes.

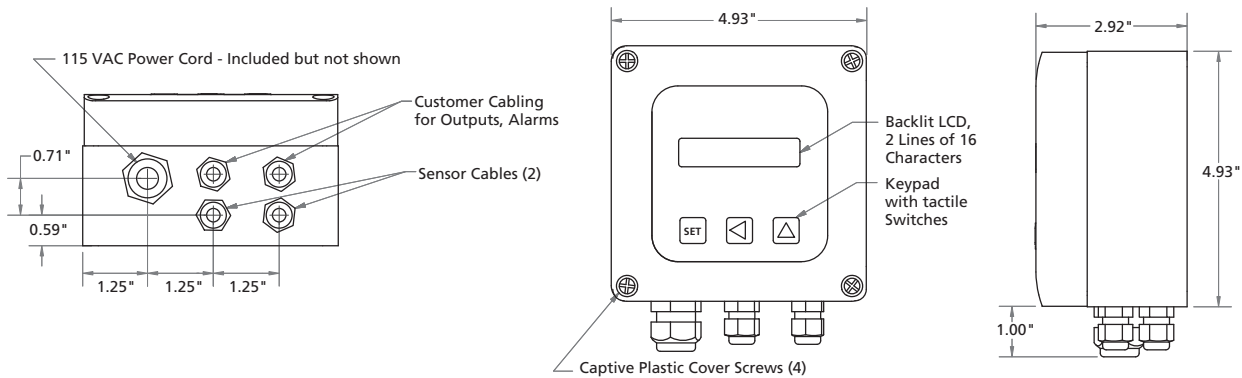
# EM Series Low Flow Mag Meters



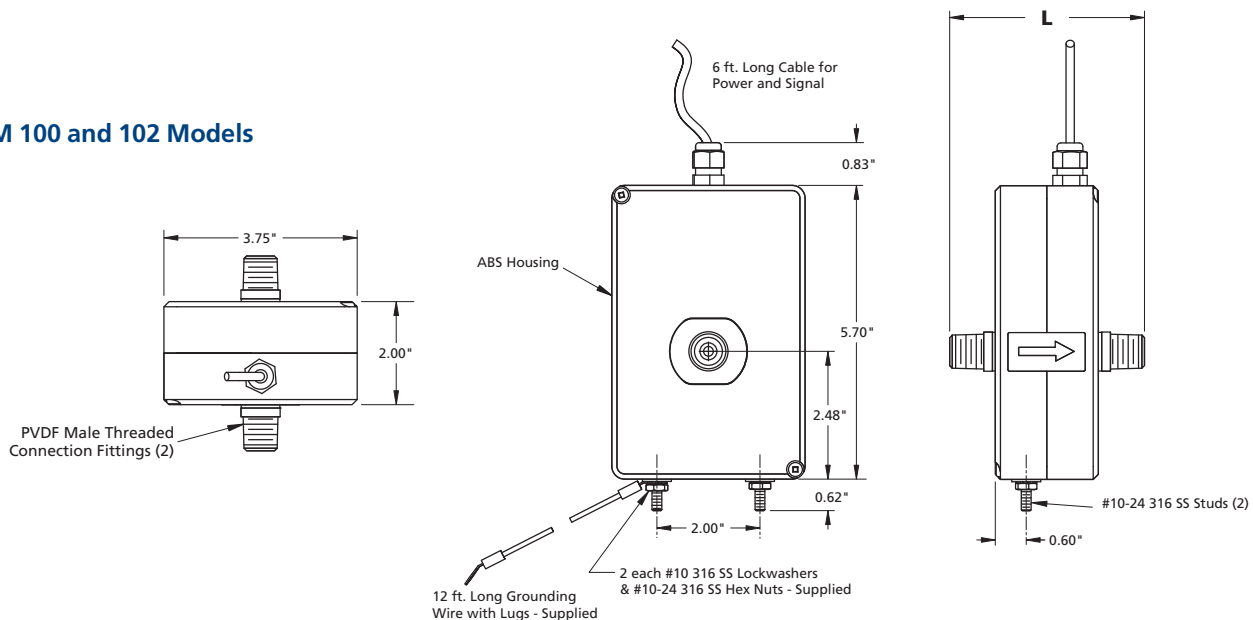
## EM 101 Flow Meter Unit



## EM 101 Control Unit



## EM 100 and 102 Models



# EM Series Low Flow Mag Meters



## MATERIALS

Flow Tube: PVDF  
 Electrodes: Platinum coated Titanium  
 O-Ring Seal: EPDM or FKM (Viton®)  
 Housing: 100/102 Flow Meter: ABS  
 101 Flow Meter: Aluminum\*  
 101 Control Unit: Polycarbonate

## POWER SUPPLY

EM 100/102: 12 – 24 VDC, 180 mA  
 EM 101: 115 VAC, 60 Hz, optional 220 VAC/50Hz

## ACCURACY

± 1% of reading, plus 0.005 gpm (0.02 l/min.)

## OUTPUTS

- EM 100:**
- Frequency opto isolated, open collector NPN, 1,000 pulses per litre, 3,785 pulses per gallon
- EM102:**
- 4 – 20 mA opto isolated, passive (500 Volt isolation)
  - Frequency output, same as EM 100
- EM 101:**
- 4 – 20 mA or 0 – 5 VDC, both opto isolated, passive (500 Volt isolation)
  - Frequency to 9999 pulses per gallon, opto isolated, open collector NPN, max. 10 mH inductance, 30 VDC
  - LCD backlit display with 16 characters, 4 digits flow rate, 8 digits total flow
  - High and low flow alarm relays, isolated, rated 100 mA at 110 Volts

## DIMENSIONS INCHES

Meter Size	Flow Tube ID	Connector Fitting	L	
			EM 100/102	EM 101
1/4"	0.25"	3/8" MNPT	3.75	3.75
3/8"	0.375"	3/8" MNPT	3.75	3.75

## FLUID MEDIA

Maximum Temperature: 85°C (185°F)  
 Maximum Pressure: 150 psi at 20°C  
 Minimum Conductivity: 20 microsiemens per cm

\* Aluminum housing for EM101 flow meter is coated with heat fused acrylic enamel.

## FLOW RANGES

Meter Size	Nominal Full Scale			Minimum for Spec. Accuracy			Low Flow Cut-Off		
	Litres/Min.	USGPM	USGal./Hr.	Litres/Min.	USGPM	USGal./Hr.	Litres/Min.	USGPM	USGal./ Hr.
1/4"	3.8	1	60	0.26	0.07	4.2	0.04	0.01	0.6
3/8"	11.0	3	180	0.76	0.20	12.0	0.11	0.03	1.8

## CONVERSION CHART – FLOW UNITS

From	To	litres/min	litres/hr	USGPM	USGal./hr	ImpGPM	ft³/min
litres/min		1	60	0.2642	15.85	0.2200	0.3531
litres/hr		0.01667	1	.004403	0.2642	.003666	.0005886
USGPM		3.785	227.12	1	60	0.8327	0.1337
US Gal./hr		0.06309	3.785	0.1667	1	0.01388	0.002228
ImpGPM		4.546	272.8	1.201	72.06	1	0.1605
ft³/min		28.317	1699	7.481	448.8	6.229	1

## ORDERING EXAMPLE

Chemline Low Flow Electromagnetic Flow Meters	EM	102	- 038	V
Model	100 – Pulse output only 102 – Pulse plus 4-20 mA output 101 – Pulse plus 4-20 mA plus LCD flow rate/total display plus max. and min. alarm relays			
Size	025 – 1/4" ID flow tube, 3/8" MNPT ends 038 – 3/8" ID flow tube, 3/8" MNPT ends			
O-Rings	E - EPDM	V - FKM (Viton®)		

Example: Chemline EM Series Electromagnetic Flow Meter, model 102, 3/8" port, 3/8" MNPT ends with FKM (Viton®) static o-ring seals.



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