

ELECTROMAGNETIC FLOW METER

With PVDF and 316L Construction

FMG90 Series



- ✓ No Moving Parts or Obstructions
- ✓ Independent to Changes of Temperature, Pressure, Viscosity
- ✓ Lightweight and Compact Design
- ✓ PVDF and 316L Wetted Parts
- ✓ Fast Response (<100 ms)

OMEGA's FMG90 Series electro-magnetic flow sensor for conductive liquid media was developed for OEM applications and does not contain any moving parts. FMG90 series is the most economic electromagnetic flow meter due to the cost optimized plastic construction. Its design is compact and lightweight. Six flow ranges are available. Changes in temperature, density, viscosity, concentration or electrical conductivity of the medium do not affect the output signal. The sensor is intended for continuous measurement of flow rates or for dosing/batching of liquids with a minimum conductivity of 20 $\mu\text{S}/\text{cm}$.

SPECIFICATIONS

Materials:

Electrodes and Grounding Rings: Stainless steel 316L

Measuring Pipe and Process Connections: PVDF

O-Rings: EPDM

Housing: ABS

Accuracy: 1% of reading

Repeatability: 1%

Minimum Conductivity of Medium: Water and other conductive liquids/ 20 $\mu\text{S}/\text{cm}$

Medium Temperature: -10 to 60°C (14 to 140°F) (non-freezing)

Ambient Temperature: 5 to 60°C (41 to 140°F)

Maximum Working Pressure:

145 psi at 20°C (68°F)

116 psi at 40°C (104°F)

87 psi at 60°C (140°F)

Response Time: <100 ms

Indications: Red LED = power, green LED = flow

Signal Shape:

Square wave frequency, can be connected as PNP or NPN open collector pulse duty ratio 50:50, maximum signal current 25 mA

Electrical Data:

Supply: 24 Vdc $\pm 15\%$

Consumption: 0.6 W

Protection Measures: Short-circuit proof and polarity protection

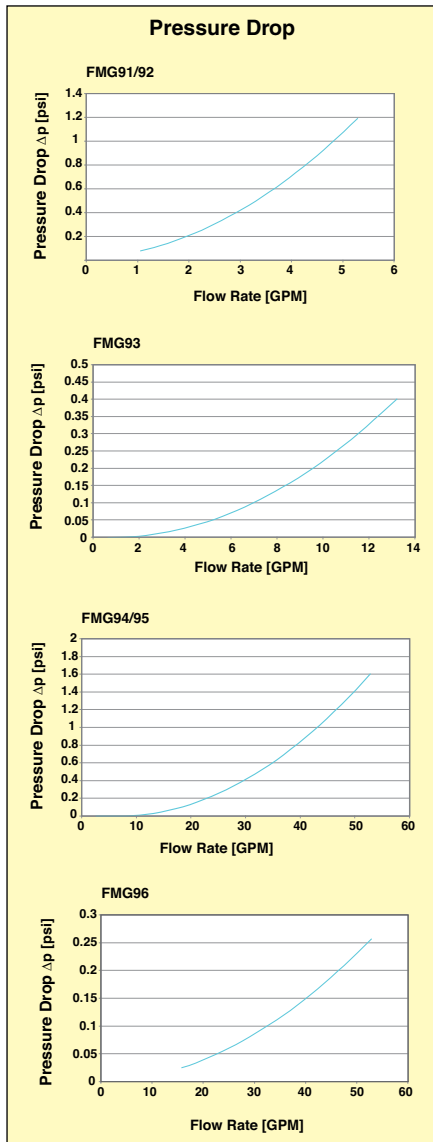
Connection: 4 pin plug connector M12 x 1

Class: NEMA 4 (IP65) (with attached cable socket)

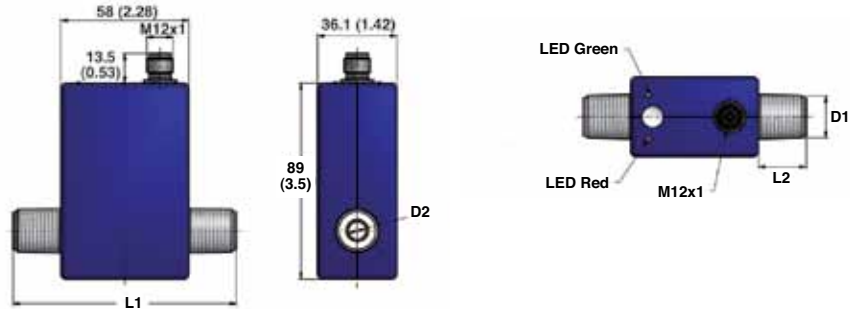


FMG94-PVDF shown actual size.

Model No.	FMG99-PVDF	FMG91-PVDF	FMG92-PVDF	FMG93-PVDF	FMG94-PVDF	FMG95-PVDF	FMG96-PVDF
Size	DN 3	DN 8	DN 8	DN 15	DN 20	DN 20	DN 25
Process Connection NPT	3/8-18	1/2-14	1/2-14	3/4-14	1-11.5	1-11.5	1 1/4-11.5
Flow Range GPM	0.026 to 0.53	0.066 to 1.3	0.26 to 5.3	0.66 to 13.2	1.3 to 26.4	2.6 to 53	3.3 to 66
Signal Output Starts At GPM	0.013	0.02	0.07	0.27	0.52	1.05	1.3
Maximum Flow Rate GPM	0.55	1.6	6.6	15.8	31.7	63.4	79.3
Pulse Rate (pulse/gal)	30,000	15,000	3000	1500	750	380	300

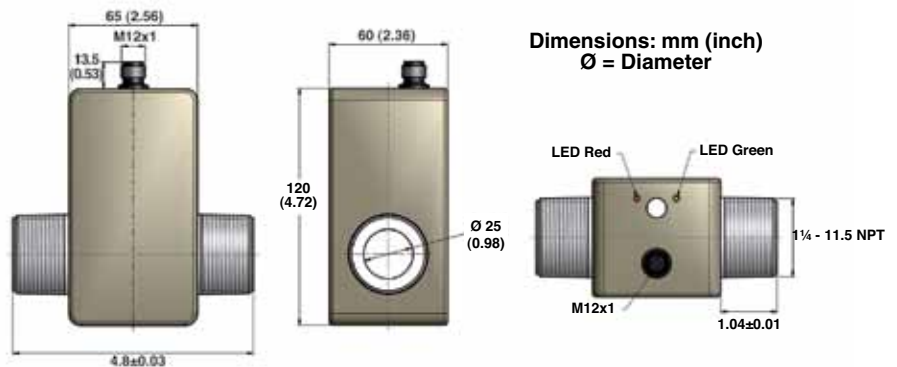


FMG99-PVDF thru FMG95-PVDF



Model No.	L1	L2	D1	D2
FMG99-PVDF	3.68 ± 0.02	0.63 ± 0.01	3/8 - 18 NPT	Ø 0.118
FMG91-PVDF	4 ± 0.02	0.83 ± 0.01	1/2 - 14 NPT	Ø 0.31
FMG92-PVDF	4 ± 0.02	0.83 ± 0.01	1/2 - 14 NPT	Ø 0.31
FMG93-PVDF	4.02 ± 0.02	0.83 ± 0.01	3/4 - 14 NPT	Ø 0.55
FMG94-PVDF	4.41 ± 0.02	0.98 ± 0.01	1 - 11.5 NPT	Ø 0.71
FMG95-PVDF	4.41 ± 0.02	0.98 ± 0.01	1 - 11.5 NPT	Ø 0.71

FMG96-PVDF



Dimensions: mm (inch)
Ø = Diameter

To Order		
Model No.	Model No. with BSP	Description (cable sold separately)
FMG99-PVDF	FMG99-PVDF-BSP	Electromagnetic flow meter 3/8 NPT, 0.026 to 0.53 GPM
FMG91-PVDF	FMG91-PVDF-BSP	Electromagnetic flow meter 1/2 NPT, 0.07 to 1.3 GPM
FMG92-PVDF	FMG92-PVDF-BSP	Electromagnetic flow meter 1/2 NPT, 0.26 to 5.3 GPM
FMG93-PVDF	FMG93-PVDF-BSP	Electromagnetic flow meter 3/4 NPT, 0.66 to 13.2 GPM
FMG94-PVDF	FMG94-PVDF-BSP	Electromagnetic flow meter 1 NPT, 1.3 to 26.4 GPM
FMG95-PVDF	FMG95-PVDF-BSP	Electromagnetic flow meter 1 NPT, 2.6 to 53 GPM
FMG96-PVDF	FMG96-PVDF-BSP	Electromagnetic flow meter 1 1/4 NPT, 3.3 to 66 GPM

Accessories

Model No.	Description
M12C-PVC-4-R-F-5	5 m (16.4') cable with right angle M12 x stripped leads
M12C-PVC-4-R-F-10	10 m (32.8') cable with right angle M12 x stripped leads
PSU-93	Unregulated power supply

Comes complete with operator's manual (cable sold separately).

Ordering Example: FMG91-PVDF, electromagnetic flow meter with 1/2 NPT connections and 0.07 to 1.3 GPM range with M12C-PVC-4-R-F-5 5 m (16.4') cable with right angle M12 connector.