

INSERTION MAGNETIC FLOW METER

FMG3000 Series



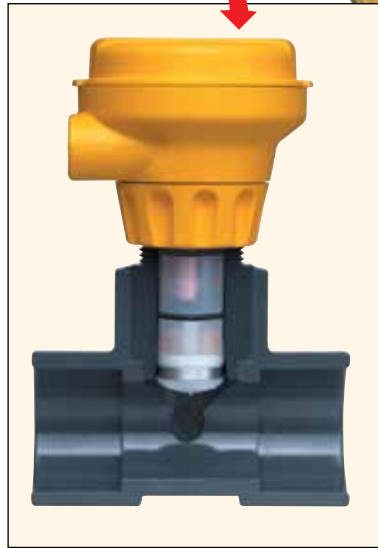
- ✓ For 0.5 to 8" Pipes
- ✓ No Moving Parts
- ✓ Flow-Rate Range: 0.05 to 5 m/s (0.15 to 16.4 ft/s)
- ✓ Accurate Measurement Even in Dirty Liquids
- ✓ Multi-Language Menu Display
- ✓ Blind 4 to 20 mA or Frequency Output Models with No Display Available
- ✓ No Pressure Drop
- ✓ Corrosion-Resistant Polypropylene

The FMG3000 Series magmeters are insertion-style magnetic flow sensors with no moving parts. All models are constructed of corrosion-resistant materials to provide long-term reliability with minimal maintenance costs. When these magmeters are used with OMEGA's comprehensive line of installation fittings, sensor alignment and insertion depth are automatic. Fittings are required for installation. Please contact OMEGA for details.

These versatile, simple-to-install flow meters deliver accurate flow measurement over a wide dynamic range in pipe sizes ranging from 0.5 to 8", satisfying the requirements of many diverse applications. FMG3000 Series magmeters offer a variety of output options for use with OMEGA flow instrumentation that has a frequency or 4 to 20 mA output. Flow velocity measurement is compensated for temperature via an integrated temperature sensor.

FMG3002-PP-D shown smaller than actual size.

FMG3002 shown smaller than actual size, with FP-5310M fitting.



SPECIFICATIONS

Performance

Linearity: $\pm 1\%$ rdg ± 0.01 m/s (0.033 ft/s)

Repeatability: $\pm 0.5\%$ of rdg @ 25°C (77°F)

Minimum Conductivity: 20 $\mu\text{S}/\text{cm}$

Pipe Size Range: 0.5 to 8"

Flow Range: 0.05 to 5 m/s (0.15 to 16.4 ft/s)

Wetted Materials

Sensor Body/Electrodes and Grounding Ring:

PP: Polypropylene/316L SS

O-Rings: FPM (FKM) standard

Other Materials:

Case: PBT

Protection Rating: NEMA 4X (IP65)

Power Requirements

4 to 20 mA: 21.6 to 26.4 Vdc, 22.1 mA maximum

Frequency: 4.5 to 26.4 Vdc, 15 mA maximum, reverse polarity and short circuit protected

Output Specifications

Current Output (4 to 20 mA):

Loop Accuracy: 32 μA maximum error (25°C @ 24 Vdc)

Isolation: Low voltage <48 Vac/Vdc from electrodes and auxiliary power

Display (Optional):

Characters: 2 x 16

Window: Polyamide

SPDT Relay: 5 A @ 30 Vdc maximum,

5 A @ 250 AC maximum

Solid State Relay: 50 mA @ 30 Vdc, 50 mA @ 42 Vac

Maximum Cable: 300 m (1000')

Error Condition: 22.1 mA

Maximum Loop Resistance: 300 Ω

Frequency Output:

Maximum Pull-Up Voltage: 30 Vdc

Maximum Current Sink: 50 mA, current limited

Maximum Cable: 300 m (1000')

Environmental Requirements

Storage Temperature: -20 to 70°C

(-4 to 158°F)

Relative Humidity: 0 to 95% (non-condensing)

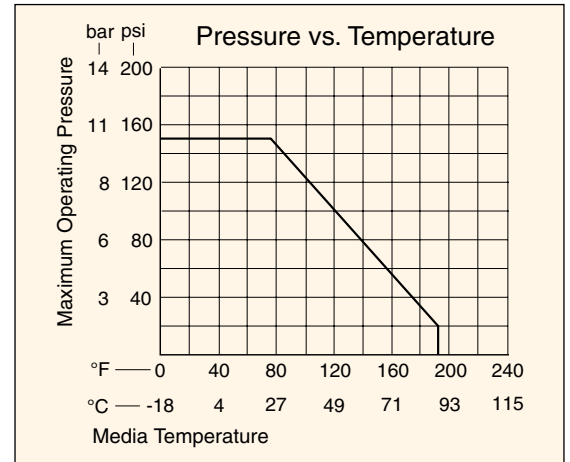
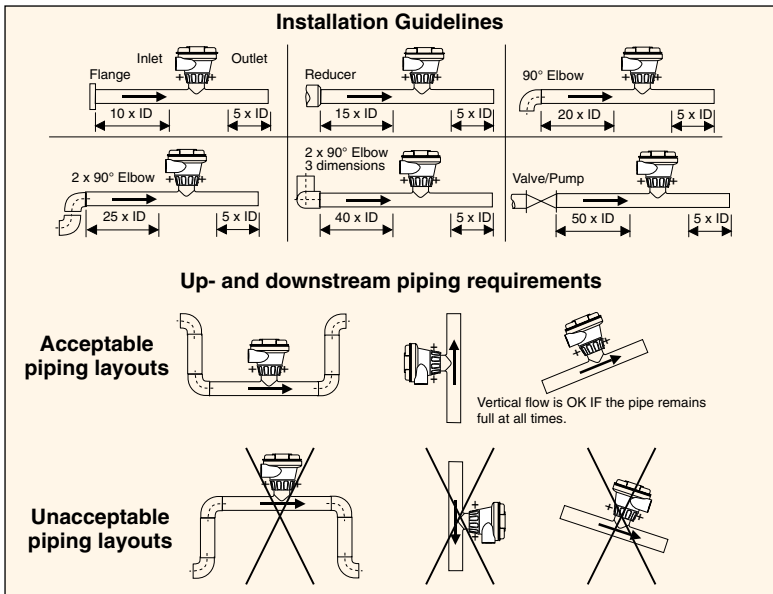
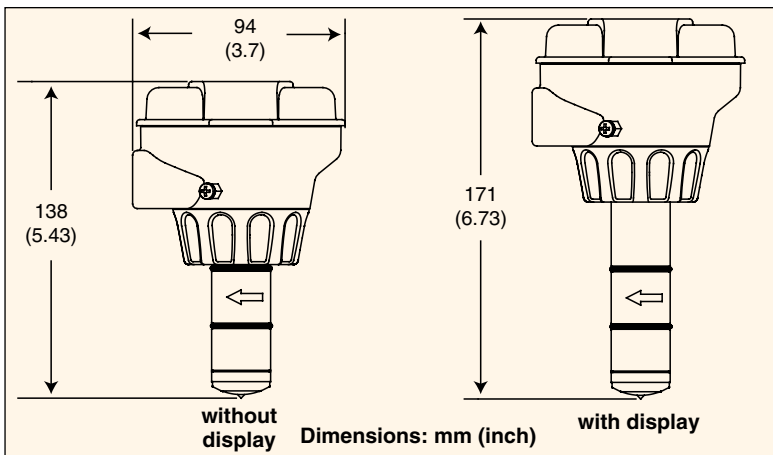
Operating Temperature:

Ambient: -10 to 70°C (14 to 158°F)

Media: 0 to 85°C (32 to 185°F)

Max Operating Pressure: 10.3 bar @ 25°C (150 psi @ 77°F), 1.4 bar @ 85°C (20 psi @ 185°F)

Standards and Approvals: CE, NEMA 4X (IP65)



To Order				
Model No. (no display)	Model No. (display)	Wetted Materials	Pipe Size (inch)*	Output**
FMG3001-PP	FMG3001-PP-D	Polypropylene/316L SS	0.5 to 4	Frequency
FMG3002-PP	FMG3002-PP-D	Polypropylene/316L SS	0.5 to 4	4 to 20 mA
FMG3101-PP	FMG3101-PP-D	Polypropylene/316L SS	5 to 8	Frequency
FMG3102-PP	FMG3102-PP-D	Polypropylene/316L SS	5 to 8	4 to 20 mA

* For larger sizes consult engineering.
 ** Display units also include 3 relays: 2 SPDT and 1 solid state.

Accessories

Model No.	Description
FPP-1220-0021	FPM O-ring
FPP-1224-0021	EPR (EPDM) O-ring
FPP-1228-0021	FFPM Perfluoroelastomer O-ring
CNi833	1/8" DIN controller with relay outputs, accepts 4 to 20 mA inputs
DPF701	1/8" DIN frequency input meter for rate and total

Comes complete with operator's manual.
Ordering Examples: FMG3102-PP, polypropylene/316L SS magmeter with 4 to 20 mA output, FP-5360S, 6" PVC saddle fitting.

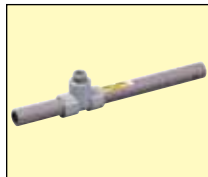
SENSOR INSTALLATION FITTINGS

Fittings now supplied without plug.
Order model number FMK-31536-1 for polypropylene plug.

To Order						
Pipe Mat'l	PVC 40 & 80	CPVC 80	†	Metric Size Only		Stainless 316
				PVDF†	Polypropylenet	
Pipe Size	Model No.	Model No.	Pipe Size	Model No.	Model No.	Model No.
½"	FP-5305M	FP-5305CM	15 mm	FP-5105	FP-5105PO	FMG-5305
¾"	FP-5307M	FP-5307CM	20 mm	FP-5107	FP-5107PO	FMG-5307
1"	FP-5310M	FP-5310CM	25 mm	FP-5110	FP-5110PO	FMG-5310
1¼"	FP-5312M	FP-5312CM	32 mm	FP-5112	FP-5112PO	FMG-5312
1½"	FP-5315M	FP-5315CM	40 mm	FP-5115	FP-5115PO	FMG-5315
2"	FP-5320M FP-5320S*	FP-5320CM	50 mm	FP-5120	FP-5120PO	FMG-5320
2½"	FP-5325S*	N/A	–	N/A	N/A	FMG-5325*
3"	FP-5330S*	N/A	–	N/A	N/A	FMG-5330*
4"	FP-5340S*	N/A	–	N/A	N/A	FMG-5340*
5"	N/A	N/A	–	N/A	N/A	FMG-5350*
6"	FP-5360S*	N/A	–	N/A	N/A	FMG-5360*
8"	FP-5380S*	N/A	N/A	N/A	N/A	FMG-5380*

* Models with weldolet or saddle fittings (shown in second row of pictures below).

† Fittings of PVDF and POLYPROPYLENE are only available in metric sizes.



All CPVC fittings have slip-on ends for schedule 80 pipe. PVDF and Polypropylene fittings larger than 2" line size are wafer style to slip between DIN standard PVDF or polypro flanges; for 2" line size and smaller, fittings have socket ends. All have FKM O-rings. PVC fittings up to 4" line size without "S" suffix have slip-on ends for schedule 40 or schedule 80 pipe; 6" line size and larger as well as fittings with "S" suffix are "cement-on" saddles.

Carbon steel and 316 stainless steel fittings for 2" line size and smaller are "tee" style; all larger 316SS fittings are Weldolet style. Galvanized iron fittings up to and including 2" line size without "S" suffix are "tee" style; all larger iron fittings and those with "S" suffix are double "strap-on" saddles.

SENSOR INSTALLATION FITTINGS

Fittings now supplied without plug.
Order model number FMK-31536-1 for polypropylene plug.

To Order

Pipe Mat'l	Galvanized Iron	Carbon Steel	Copper/Bronze (Brass)
Pipe Size	Model No.	Model No.	Model No.
1/2"	N/A	FP-5305CS	FP-5305CU
3/4"	N/A	FP-5307CS	FP-5307CU
1"	FP-5310GI	FP-5310CS	FP-5310CU FP-5310BR
1 1/4"	FP-5312GI	FP-5312CS	FP-5312CU FP-5312BR
1 1/2"	FP-5315GI	FP-5315CS	FP-5315CU FP-5315BR
2"	FP-5320GI FP-5320GIS*	FP-5320CS	FP-5320CU FP-5320BR
2 1/2"	FP-5325GI*	FP-5325CS*	FP-5325BR*
3"	FP-5330GI*	FP-5330CS*	FP-5330BR*
4"	FP-5340GI*	FP-5340CS*	FP-5340BR*
5"	FP-5350GI*	FP-5350CS*	FP-5350BR*
6"	FP-5360GI*	FP-5360CS*	FP-5360BR*
8"	FP-5380GI*	FP-5380CS*	FP-5380BR*

* Models with weldolet or saddle-type fittings (pictured in bottom row).

Please contact OMEGA for special fitting requirements not covered in this chart.



All copper fittings "CU" suffix for copper and brass tubing have sweat-on end fittings; brass fittings 2 inches and smaller are NPT threaded tees; above 2", brass fittings are Brazelots.