

# OMEGA FPM-5800 Flow Indicator Instructions

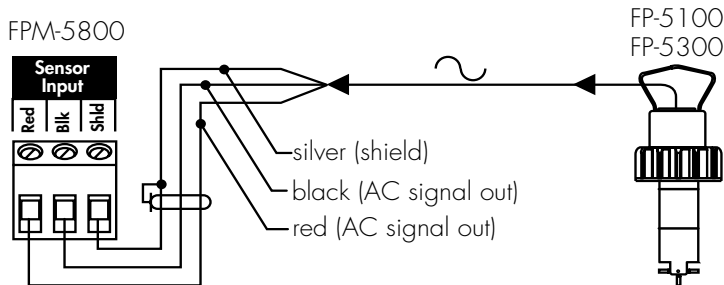


**CAUTION!**  
Follow instructions carefully to avoid personal injury.



= Caution, refer to instruction manual for more details

## 1. Compatible Sensor Wiring



### Technical Notes:

- Use 2-conductor **shielded** cable for sensor cable splices up to 60 m (200 ft)
- Maintain cable shield through cable splice.
- Route sensor cable away from AC power lines.

## 2. Calibration

The FPM-5800 flow metering system utilizes the AC signal amplitude from the FP-5100 or FP-5300 sensor to drive the FPM-5800 meter.

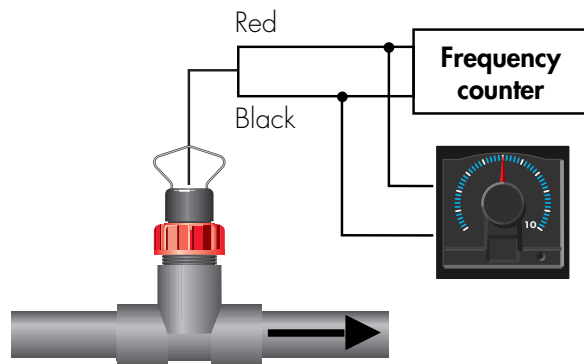
The front panel meter movement adjustment (SPAN) is easily accessed under the removable front window for simple calibration. A dial kit with six dial ranges, assorted flow unit/multiplier decals, and dial installation instructions is included for your convenience.

### Equipment Required

- Frequency counter
- OMEGA FP-5100 or FP-5300 Sensor installed in the process line
- Maximum (stable) flow rate induced in the process line
- Standard and phillips head screwdriver

### Procedure

1. Induce the **maximum** (stable) flow rate in your process line.
2. Using the frequency counter, monitor and record the FP-5100 or FP-5300 sensor frequency output (Hz), see diagram below:



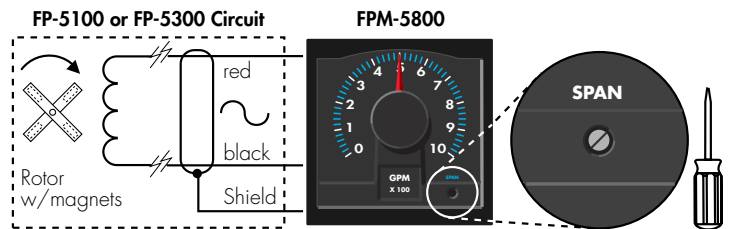
Sensor Frequency = \_\_\_\_\_ Hz

### Technical note:

Sensor frequency **MUST** be greater than 45 Hz for full scale needle deflection.

3. Calculate the actual maximum flow rate in your process line as follows:

Maximum flow rate = Sensor frequency (step 2) X A-Factor (Section 6)

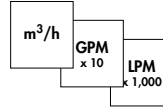
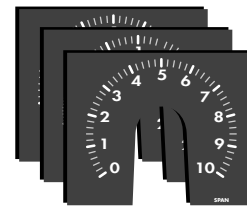


4. Install the appropriate dial face and flow unit/multiplier decal covering your flow system's maximum flow rate (step 3). Refer to dial installation instructions included with dial kit.

Your instrument dial kit (included) contains the following:

### 6 Dials:

- 0-2
- 0-4
- 0-6
- 0-8
- 0-10
- 0-100

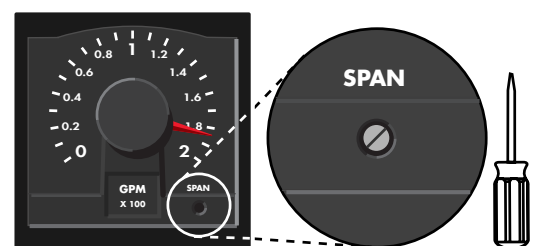


**Assorted Unit/multiplier Decals:**  
X 10  
X 100  
X 1,000  
X 10,000

**Example:** A flow system's maximum flow rate is 18.3 GPM. The proper dial and flow unit/multiplier decal for this flow system is:

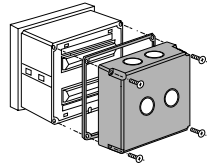
0 - 2 dial + GPM X 10 decal

5. **Disconnect frequency counter**, then access and adjust the "SPAN" potentiometer to match the calculated maximum flow rate (step 3). After adjustment, calibration is complete.

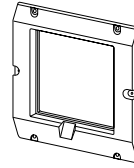


### 3. Parts and Accessories

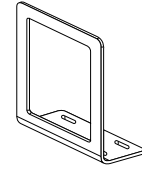
There are no user replaceable components in the FPM-5800. Unauthorized repair attempts may void warranty.



Splashproof rear cover, FPM-5000-SBCK



5 x 5 inch adapter plate for OMEGA retrofit, FPM-5000-RAK



Optional surface mount bracket, FPM-5000-MB

### 4. Specifications

#### General

Sensor compatibility: OMEGA FP-5100 & FP-5300 series only  
 Minimum full scale range: 7 fps

#### Enclosure:

- Rating: NEMA 4X/IP65 front
- Dimensions: 1/4 DIN, 96 x 96 x 88 mm (3.8 x 3.8 x 3.5 in.)
- Case: ABS plastic
- Weight: Approximately 450 g (16 oz.)

#### Display:

- Type: Taut-band suspension meter movement, 250° deflection (not suitable for prolonged exposure to vibration)
- Accuracy: ±2% of full scale
- Repeatability: ±1% of full scale

#### Environmental

Operating temp.: -10 to 65 °C (14 to 149 °F)  
 Storage temp.: -15 to 80 °C (5 to 176 °F)  
 Relative humidity: 0 to 95%, non-condensing

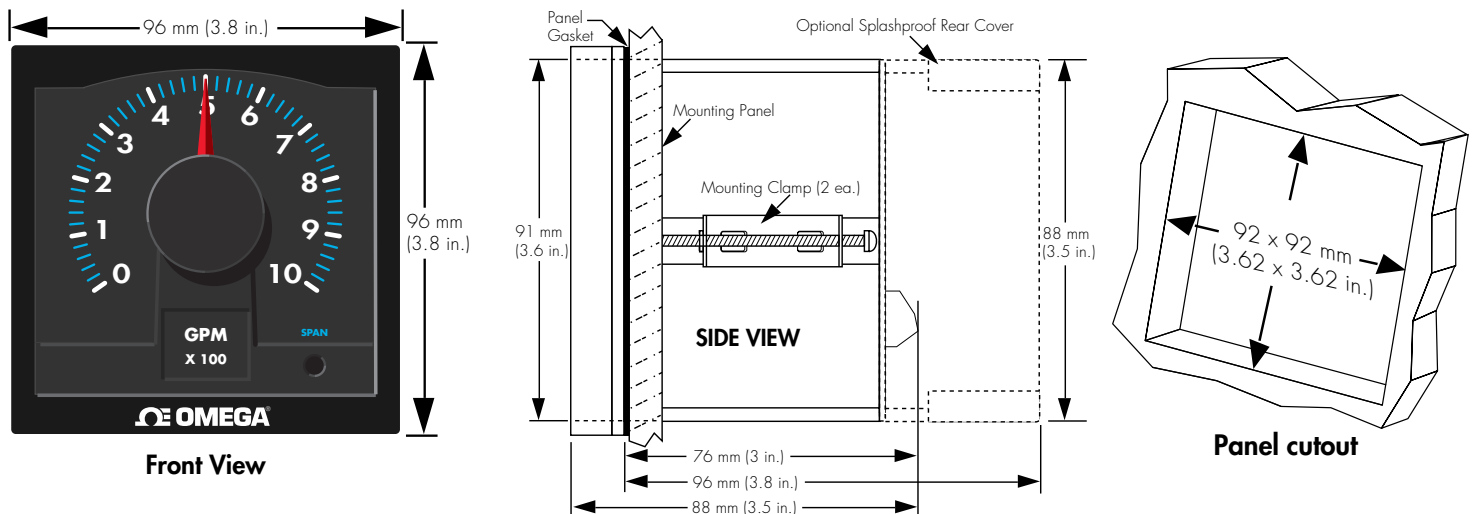
#### Quality Standards

- FM, CSA, CE, UL listed
- Manufactured under ISO 9001

#### Electrical

Power: None  
 Noise immunity: EN50082-2  
 Noise emissions: EN55011  
 Safety: EN61010-1

#### Dimensions



### 5. Maintenance

• **Front window:** Never wipe the front window with static retentive cloths such as wool or polyester which may induce a static charge. If a static charge develops on the window, the indication needle may appear erratic or non-functional. When this occurs, clean the front window with an anti-static cloth, or a soft cotton cloth and anti-static spray, or a mild liquid soap solution to remove the static charge.

• **Case:** Clean the instrument case and front panel with a soft cotton cloth dampened with a mild liquid soap solution.

## 6. OMEGA FP-5100 or FP-5300 Flow Sensor A-Factors

PIPE SIZE	OMEGA FITTING	A-FACTORS		
		1 Hz =		
		U.S. GPM	LPM	m <sup>3</sup> /h
<b>SCH 80 PVC TEES FOR SCH 80 PVC PIPE</b>				
1/2 IN.	FP-5305	0.1250	0.4729	0.0284
3/4 IN.	FP-5307	0.2328	0.8812	0.0529
1 IN.	FP-5310	0.3435	1.3002	0.0780
1 1/4 IN.	FP-5312	0.7195	2.7233	0.1634
1 1/2 IN.	FP-5315	1.0242	3.8767	0.2326
2 IN.	FP-5320	1.8473	6.9920	0.4195
2 1/2 IN.	FP-5325	2.7481	10.4016	0.6241
3 IN.	FP-5330	4.4310	16.7714	1.0063
4 IN.	FP-5340	7.8681	29.7807	1.7868
<b>SCH 80 CPVC TEES FOR SCH 80 CPVC PIPE</b>				
1/2 IN.	FP-5305C	0.1250	0.4729	0.0284
3/4 IN.	FP-5307C	0.2328	0.8812	0.0529
1 IN.	FP-5310C	0.3435	1.3002	0.0780
1 1/4 IN.	FP-5312C	0.7195	2.7233	0.1634
1 1/2 IN.	FP-5315C	1.0242	3.8767	0.2326
<b>SCH 80 PVC SADDLES FOR SCH 80 PVC PIPE</b>				
2 IN.	FP-5320S	1.8473	6.9920	0.4195
2 1/2 IN.	FP-5325S	2.7481	10.4016	0.6241
3 IN.	FP-5330S	4.4310	16.7714	1.0063
4 IN.	FP-5340S	7.8681	29.7807	1.7868
6 IN.	FP-5360S	14.4152	54.5614	3.2737
8 IN.	FP-5380S	25.3115	95.8039	5.7482
<b>SCH 80 PVC SADDLE ON SCH 40 PVC PIPE</b>				
2 IN.	FP-5320S	2.1938	8.3035	0.4982
2 1/2 IN.	FP-5325S	3.1789	12.0321	0.7219
3 IN.	FP-5330S	4.7477	17.9702	1.0782
4 IN.	FP-5340S	8.9177	33.7536	2.0252
6 IN.	FP-5360S	16.0871	60.8897	3.6534
8 IN.	FP-5380S	27.8714	105.4932	6.3296
<b>CARBON STEEL TEES ON SCH 40 PIPE</b>				
1/2 IN.	FP-5305CS	0.1621	0.6134	0.0368
3/4 IN.	FP-5307CS	0.2829	1.0709	0.0643
1 IN.	FP-5310CS	0.4251	1.6091	0.0965
1 1/4 IN.	FP-5312CS	0.9892	3.7442	0.2246
1 1/2 IN.	FP-5315CS	1.3230	5.0077	0.3005
2 IN.	FP-5220CS	2.2416	8.4845	0.5091
<b>STAINLESS STEEL TEES ON SCH 40 PIPE</b>				
1/2 IN.	FMG-5305	0.1671	0.6327	0.0380
3/4 IN.	FMG-5307	0.2961	1.1209	0.0673
1 IN.	FMG-5310	0.4719	1.7862	0.1072
1 1/4 IN.	FMG-5312	0.9691	3.6682	0.2201
1 1/2 IN.	FMG-5315	1.4848	5.6199	0.3372
2 IN.	FMG-5320	2.6906	10.1839	0.6110
<b>GALVANIZED IRON TEES ON SCH 40 PIPE</b>				
1 IN.	FP-5310GI	0.5740	2.1724	0.1303
1 1/4 IN.	FP-5312GI	0.9527	3.6060	0.2164
1 1/2 IN.	FP-5315GI	1.2851	4.8642	0.2919
2 IN.	FP-5320GI	2.0367	7.7089	0.4625

PIPE SIZE	OMEGA FITTING	A-FACTORS		
		1 Hz =		
		U.S. GPM	LPM	m <sup>3</sup> /h
<b>COPPER/BRONZE BRAZOLETS ON SCH 40 PIPE</b>				
2 1/2 IN.	FP-5325BR	3.1915	12.0798	0.7248
3 IN.	FP-5330BR	4.9302	18.6606	1.1196
4 IN.	FP-5340BR	8.6207	32.6293	1.9578
5 IN.	FP-5350BR	11.4068	43.1749	2.5905
6 IN.	FP-5360BR	16.2602	61.5447	3.6927
8 IN.	FP-5380BR	28.1690	106.6197	6.3972
10 IN.	FP-5381BR	44.4444	168.2222	10.0933
12 IN.	FP-5382BR	62.5000	236.5625	14.1938
<b>SCH 80 IRON SADDLES ON SCH 80 PIPE</b>				
2 IN.	FP-5320	1.8541	7.0179	0.4211
2 1/2 IN.	FP-5325	2.7003	10.2205	0.6132
3 IN.	FP-5330	4.4709	16.9225	1.0154
4 IN.	FP-5340	7.8329	29.6475	1.7789
5 IN.	FP-5350	10.2389	38.7543	2.3253
6 IN.	FP-5360	14.6699	55.5257	3.3315
8 IN.	FP-5380	25.7511	97.4678	5.8481
10 IN.	FP-5381	39.2157	148.4314	8.9059
12 IN.	FP-5382	56.6038	214.2453	12.8547
<b>SCH 80 IRON SADDLE ON SCH 40 PIPE</b>				
2 IN.	FP-5320GIS	2.2371	8.4676	0.5081
2 1/2 IN.	FP-5325GIS	3.1915	12.0798	0.7248
3 IN.	FP-5330GIS	5.0042	18.9408	1.1364
4 IN.	FP-5340GIS	8.7591	33.1533	1.9892
5 IN.	FP-5350GIS	11.2570	42.6079	2.5565
6 IN.	FP-5360GIS	15.9574	60.3989	3.6239
8 IN.	FP-5380GIS	28.1690	106.6197	6.3972
10 IN.	FP-5381GIS	44.4444	168.2222	10.0933
12 IN.	FP-5382GIS	62.5000	236.5625	14.1938

### A-Factor Conversion Formulas:

1 U.S. gallon =  
 0.83267 Imperial gallon  
 0.003785 cubic meters  
 0.000003069 Acre feet  
 8.3454 pounds of water

		----- A-FACTORS -----		
PIPE	OMEGA	----- 1 Hz = -----		
SIZE	FITTING	U.S. GPM	LPM	m3/h
<b>BRONZE TEES ON SCH 40 PIPE</b>				
1 IN.	FP-5310BR	0.5740	2.1724	0.1303
1 1/4 IN.	FP-5312BR	0.9527	3.6060	0.2164
1 1/2 IN.	FP-5315BR	1.2851	4.8642	0.2919
2 IN.	FP-5320BR	2.0367	7.7089	0.4625
<b>COPPER TEE FITTINGS ON COPPER PIPE</b>				
1/2 IN. SK K	FP-5305CU	0.1354	0.5124	0.0307
1/2 IN. SK L		0.1448	0.5480	0.0329
3/4 IN. SK K	FP-5307CU	0.2828	1.0704	0.0642
3/4 IN. SK L		0.3140	1.1885	0.0713
1 IN. SK K	FP-5310CU	0.4718	1.7857	0.1071
1 IN. SK L		0.5007	1.8950	0.1137
1 1/4 IN. SK K	FP-5312CU	0.6801	2.5743	0.1545
1 1/4 IN. SK L		0.7022	2.6577	0.1595
1 1/2 IN. SK K	FP-5315CU	1.0533	3.9869	0.2392
1 1/2 IN. SK L		1.0878	4.1171	0.2470
2 IN. SK K	FP-5320CU	2.0429	7.7325	0.4639
2 IN. SK L		2.0975	7.9391	0.4763
<b>STAINLESS STEEL WELDOLETS ON SCH 40 PIPE</b>				
2 1/2 IN.	FMG-5325	3.1915	12.0798	0.7248
3 IN.	FMG-5330	4.9302	18.6606	1.1196
4 IN.	FMG-5340	8.6207	32.6293	1.9578
5 IN.	FMG-5350	11.4068	43.1749	2.5905
6 IN.	FMG-5360	16.2602	61.5447	3.6927
8 IN.	FMG-5380	28.1690	106.6197	6.3972
10 IN.	FMG-5381	44.4444	168.2222	10.0933
12 IN.	FMG-5382	62.5000	236.5625	14.1938
<b>CARBON STEEL WELDOLETS ON SCH 40 PIPE</b>				
2 1/2 IN.	FP-5325CS	3.1915	12.0798	0.7248
3 IN.	FP-5330CS	4.9302	18.6606	1.1196
4 IN.	FP-5340CS	8.6207	32.6293	1.9578
5 IN.	FP-5350CS	11.4068	43.1749	2.5905
6 IN.	FP-5360CS	16.2602	61.5447	3.6927
8 IN.	FP-5380CS	28.1690	106.6197	6.3972
10 IN.	FP-5381CS	44.4444	168.2222	10.0933
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