1 YEAR
WARRANTY

OMEGA®

User's Guide

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FPM-5800
Flow Indicator

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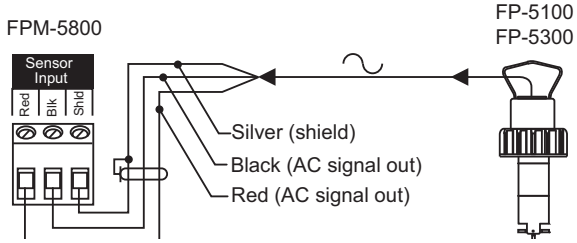
OMEGA FPM-5800 Flow Indicator Instructions

CAUTION!
Follow instructions carefully to avoid personal injury.

1. Compatible Sensor Wiring



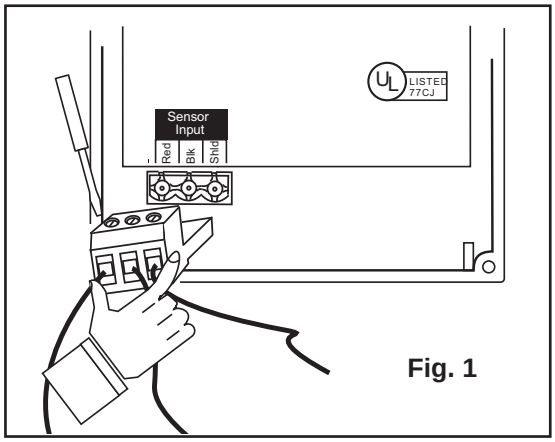


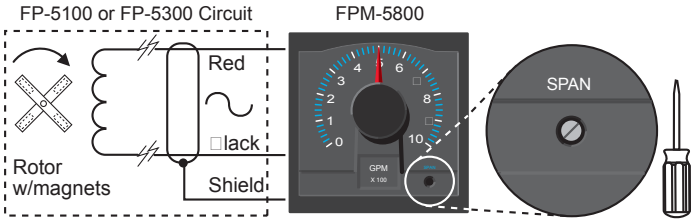
Fig. 1

Technical Notes:
- Remove terminal block for easy wiring (Fig. 1).
- Maintain cable shield through cable splice.
- Route sensor cable away from AC power lines.
- Use 2-conductor shielded cable for sensor cable splices up to 60 m (200 ft)

2. Calibration

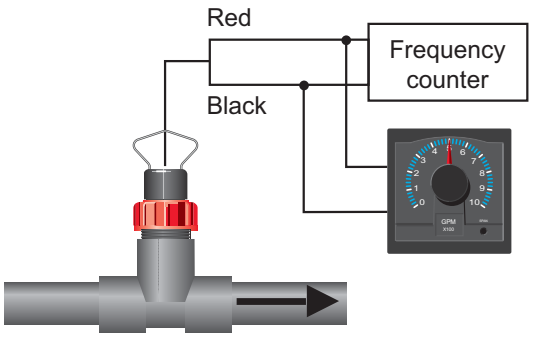
The FPM-5800 flow metering system utilizes the AC signal amplitude from the FP-5100 or FP-5300 sensor to drive the FPM-5800 meter.

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:

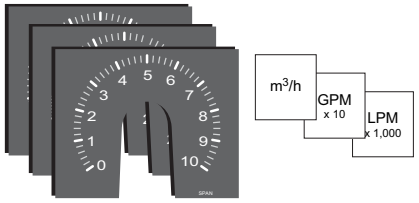
Maximum flow rate = Sensor frequency (step 2) X A-Factor (Section 6)

Maximum Flow rate = _____

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

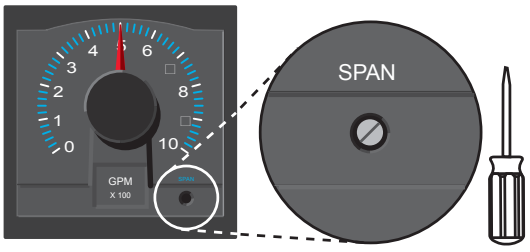


Assorted Unit/multiplier Decals:
X 10
X 100
X 1,000
X 10,000

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:

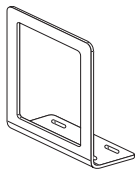
0 - 2 dial + GPM X 10 decal

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.



Optional surface mount bracket, FPM-5000-MB

4. Specifications

General

Sensor compatibility:	OMEGA FP-5100 & FP-5300 series only
Min. 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

Dimensions

Environmental

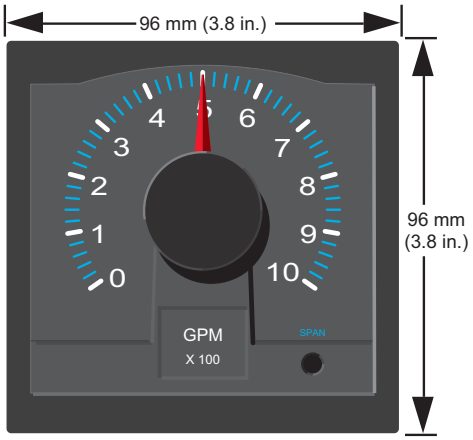
Operating temp.:	-10 to 65 °C (14 to 149 °F)
Storage temp.:	-15 to 80 °C (5 to 176 °F)
Relative humidity:	0 to 95%, non-condensing

Quality Standards

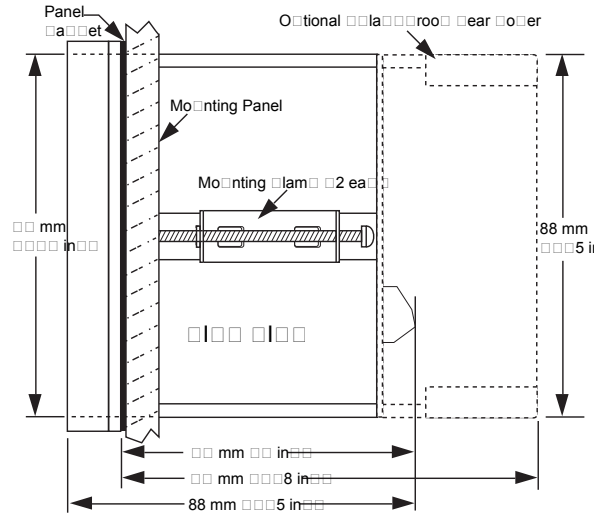
- FM, CSA, CE, UL listed
- Manufactured under ISO 9001

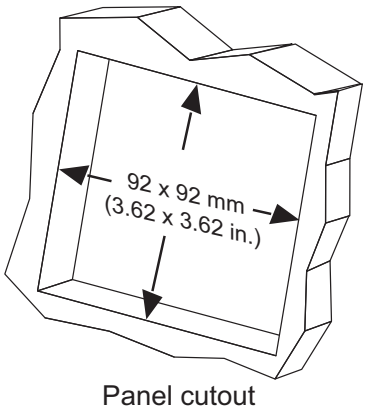
Electrical

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



Front View





Panel cutout

5. Maintenance

- **Front window:** Never wipe the front window with materials 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	A-FACTORS 1 Hz = LPM	A-FACTORS 1 Hz = m3/h
SCH 80 PVC TEES FOR SCH 80 PVC PIPE				
1/2 IN.	FP-5305M	0.1250	0.4729	0.0284
3/4 IN.	FP-5307M	0.2328	0.8812	0.0529
1 IN.	FP-5310M	0.3435	1.3002	0.0780
1-1/4 IN.	FP-5312M	0.7195	2.7233	0.1634
1-1/2 IN.	FP-5315M	1.0242	3.8767	0.2326
2 IN.	FP-5320M	1.8473	6.9920	0.4195
2-1/2 IN.	FP-5325M	2.7481	10.4016	0.6241
3 IN.	FP-5330M	4.4310	16.7714	1.0063
4 IN.	FP-5340M	7.8681	29.7807	1.7868
SCH 80 CPVC TEES FOR SCH 80 CPVC PIPE				
1/2 IN.	FP-5305CM	0.1250	0.4729	0.0284
3/4 IN.	FP-5307CM	0.2328	0.8812	0.0529
1 IN.	FP-5310CM	0.3435	1.3002	0.0780
1-1/4 IN.	FP-5312CM	0.7195	2.7233	0.1634
1-1/2 IN.	FP-5315CM	1.0242	3.8767	0.2326
SCH 80 PVC SADDLES FOR SCH 80 PVC PIPE				
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
SCH 80 PVC SADDLE ON SCH 40 PVC PIPE				
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
CARBON STEEL TEES ON SCH 40 PIPE				
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-5320CS	2.2416	8.4845	0.5091
STAINLESS STEEL TEES ON SCH 40 PIPE				
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-/2 IN.	FMG-5315	1.4848	5.6199	0.3372
2 IN.	FMG-5320	2.6906	10.1839	0.6110
GALVANIZED IRON TEES ON SCH 40 PIPE				
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	A-FACTORS 1 Hz = LPM	A-FACTORS 1 Hz = m3/h
COPPER/BRONZE BRAZOLETS ON SCH 40 PIPE				
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
SCH 80 IRON SADDLES ON SCH 80 PIPE				
2 IN.	FP-5320GIS	1.8541	7.0179	0.4211
2 1/2 IN.	FP-5325GI	2.7003	10.2205	0.6132
3 IN.	FP-5330GI	4.4709	16.9225	1.0154
4 IN.	FP-5340GI	7.8329	29.6475	1.7789
5 IN.	FP-5350GI	10.2389	38.7543	2.3253
6 IN.	FP-5360GI	14.6699	55.5257	3.3315
8 IN.	FP-5380GI	25.7511	97.4678	5.8481
10 IN.	FP-5381GI	39.2157	148.4314	8.9059
12 IN.	FP-5382GI	56.6038	214.2453	12.8547
SCH 80 IRON SADDLE ON SCH 40 PIPE				
2 IN.	FP-5320GIS	2.2371	8.4676	0.5081
2-1/2 IN.	FP-5325GI	3.1915	12.0798	0.7248
3 IN.	FP-5330GI	5.0042	18.9408	1.1364
4 IN.	FP-5340GI	8.7591	33.1533	1.9892
5 IN.	FP-5350GI	11.2570	42.6079	2.5565
6 IN.	FP-5360GI	15.9574	60.3989	3.6239
8 IN.	FP-5380GI	28.1690	106.6197	6.3972
10 IN.	FP-5381GI	44.4444	168.2222	10.0933
12 IN.	FP-5382GI	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

PIPE SIZE	OMEGA FITTING	A-FACTORS 1 Hz = U.S. GPM	LPM	m3/h
BRONZE TEES ON SCH 40 PIPE				
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
COPPER TEE FITTINGS ON COPPER PIPE				
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
STAINLESS STEEL WELDOLETS ON SCH 40 PIPE				
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
CARBON STEEL WELDOLETS ON SCH 40 PIPE				
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
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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

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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