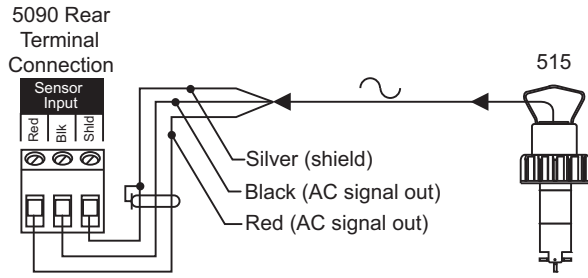




## 1. Compatible Sensor Wiring



### 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 extension up to 61 m (200 ft)

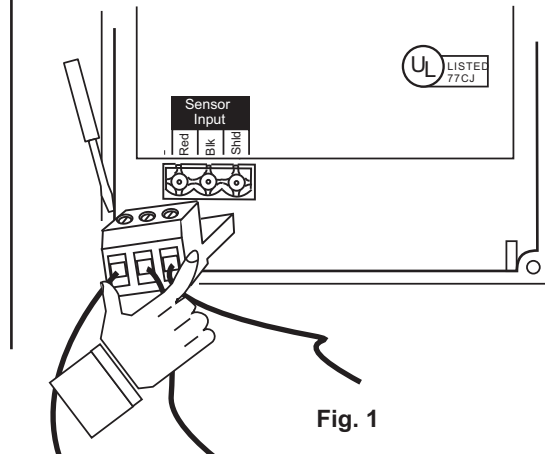
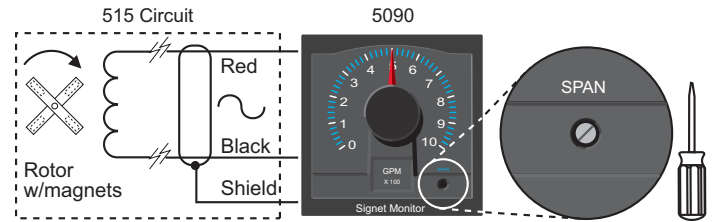


Fig. 1

## 2. Calibration

The 5090/515 flow metering system utilizes the AC signal amplitude from the 515 sensor to drive the 5090 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.

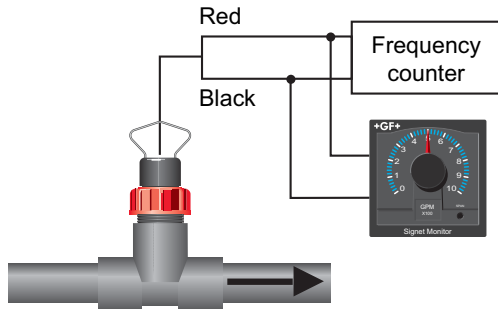


### Equipment Required

- Frequency counter
- Signet 515 Sensor installed in 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 515 sensor frequency output:



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 for the maximum flow rate (Step 3). Refer to dial installation instructions included with dial kit.

**The dial kit includes the following:**

<p>Assorted Unit and Multiplier Decals:</p> <ul style="list-style-type: none"> <li>X 10</li> <li>X 100</li> <li>X 1,000</li> <li>X 10,000</li> </ul>	<p>6 Dials:</p> <ul style="list-style-type: none"> <li>0-2</li> <li>0-4</li> <li>0-6</li> <li>0-8</li> <li>0-10</li> <li>0-100</li> </ul>
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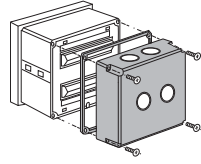
Example: A flow system's maximum flow rate is 18.3 GPM. The proper dial and flow unit/multiplier decal for this flow system is: 0 - 2 dial + GPM x 10 decal

5. Disconnect frequency counter. Access and adjust the "SPAN" potentiometer to match the calculated maximum flow rate from Step 3. After adjustment, calibration is complete.

### 3. Parts and Accessories

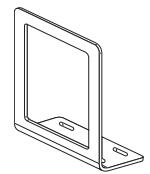
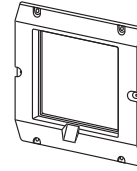
There are no user replaceable components in the 5090. Unauthorized repair attempts may void warranty.

- Front snap-on bezel, 3-5000.525 (code 198 840 226)
- Assorted flow unit/multiplier decal sheet, 3-5090.611 (code 198 840 228)
- 5090 Instruction sheet, 3-5090.090-1 (code 198 869 912)



Splashproof rear cover  
3-5000.395  
(code 198 840 227)

5 x 5 inch adapter plate for retrofitting Signet 500 series  
3-5000.399 (code 198 840 224)



Optional surface mount bracket  
3-5000.598  
(code 198 840 225)

### 4. Specifications

#### General

Sensor compatibility: Signet 515 only  
Minimum full scale range: 7 fps

- 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

#### Materials

- Case: ABS plastic
- Panel and case gasket: Neoprene
- Window: Hard-coated polycarbonate

#### Electrical

Power Requirements: None


#### Environmental

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

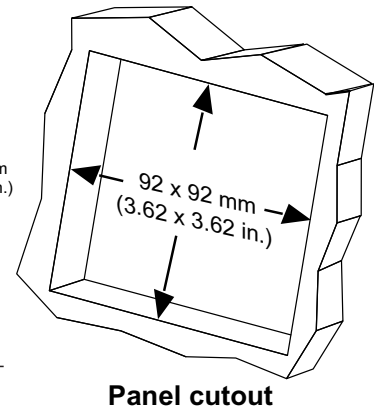
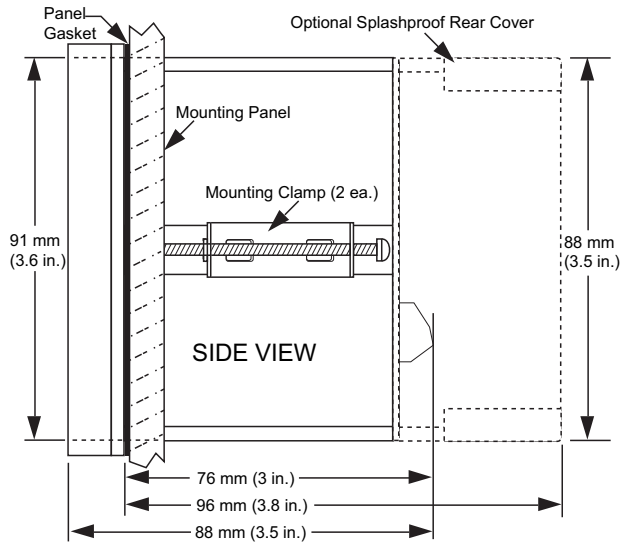
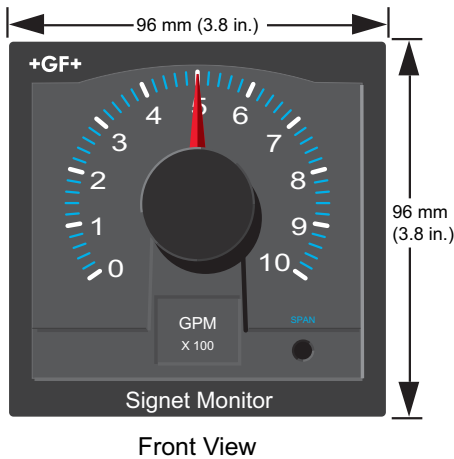
#### Enclosure:

- Rating: NEMA 4X/IP65 front
- Dimensions: 1/4 DIN, 96 x 96 x 88 mm (3.8 x 3.8 x 3.5 in.)

#### Standards and Approvals

- FM
- UL, CUL
- Manufactured under ISO 9001 and ISO 14001
-  China RoHS (Go to [www.gfsignet.com](http://www.gfsignet.com) for details)

#### Dimensions



### 5. Maintenance

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.

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

## 6. Signet 515 Flow Sensor A-Factors

		----- A-FACTORS -----		
PIPE SIZE	SIGNET FITTING	----- 1 Hz = -----		
		U.S. GPM	LPM	m3/h
<b>SCH 80 PVC TEES FOR SCH 80 PVC PIPE</b>				
1/2 IN.	PV8T005	0.1250	0.4729	0.0284
3/4 IN.	PV8T007	0.2328	0.8812	0.0529
1 IN.	PV8T010	0.3435	1.3002	0.0780
1 1/4 IN.	PV8T012	0.7195	2.7233	0.1634
1 1/2 IN.	PV8T015	1.0242	3.8767	0.2326
2 IN.	PV8T020	1.8473	6.9920	0.4195
2 1/2 IN.	PV8T025	2.7481	10.4016	0.6241
3 IN.	PV8T030	4.4310	16.7714	1.0063
4 IN.	PV8T040	7.8681	29.7807	1.7868
<b>SCH 80 CPVC TEES FOR SCH 80 CPVC PIPE</b>				
1/2 IN.	CPV8T005	0.1250	0.4729	0.0284
3/4 IN.	CPV8T007	0.2328	0.8812	0.0529
1 IN.	CPV8T010	0.3435	1.3002	0.0780
1 1/4 IN.	CPV8T012	0.7195	2.7233	0.1634
1 1/2 IN.	CPV8T015	1.0242	3.8767	0.2326
<b>SCH 80 PVC SADDLES FOR SCH 80 PVC PIPE</b>				
2 IN.	PV8S020	1.8473	6.9920	0.4195
2 1/2 IN.	PV8S025	2.7481	10.4016	0.6241
3 IN.	PV8S030	4.4310	16.7714	1.0063
4 IN.	PV8S040	7.8681	29.7807	1.7868
6 IN.	PV8S060	14.4152	54.5614	3.2737
8 IN.	PV8S080	25.3115	95.8039	5.7482
<b>SCH 80 PVC SADDLE ON SCH 40 PVC PIPE</b>				
2 IN.	PV8S020	2.1938	8.3035	0.4982
2 1/2 IN.	PV8S025	3.1789	12.0321	0.7219
3 IN.	PV8S030	4.7477	17.9702	1.0782
4 IN.	PV8S040	8.9177	33.7536	2.0252
6 IN.	PV8S060	16.0871	60.8897	3.6534
8 IN.	PV8S080	27.8714	105.4932	6.3296
<b>CARBON STEEL TEES ON SCH 40 PIPE</b>				
1/2 IN.	CS4T005	0.1621	0.6134	0.0368
3/4 IN.	CS4T007	0.2829	1.0709	0.0643
1 IN.	CS4T010	0.4251	1.6091	0.0965
1 1/4 IN.	CS4T012	0.9892	3.7442	0.2246
1 1/2 IN.	CS4T015	1.3230	5.0077	0.3005
2 IN.	CS4T020	2.2416	8.4845	0.5091
<b>STAINLESS STEEL TEES ON SCH 40 PIPE</b>				
1/2 IN.	CR4T005	0.1671	0.6327	0.0380
3/4 IN.	CR4T007	0.2961	1.1209	0.0673
1 IN.	CR4T010	0.4719	1.7862	0.1072
1 1/4 IN.	CR4T012	0.9691	3.6682	0.2201
1 1/2 IN.	CR4T015	1.4848	5.6199	0.3372
2 IN.	CR4T020	2.6906	10.1839	0.6110
<b>GALVANIZED IRON TEES ON SCH 40 PIPE</b>				
1 IN.	IR4T010	0.5740	2.1724	0.1303
1 1/4 IN.	IR4T012	0.9527	3.6060	0.2164
1 1/2 IN.	IR4T015	1.2851	4.8642	0.2919
2 IN.	IR4T020	2.0367	7.7089	0.4625
<b>BRONZE TEES ON SCH 40 PIPE</b>				
1 IN.	BR4T010	0.5740	2.1724	0.1303
1 1/4 IN.	BR4T012	0.9527	3.6060	0.2164
1 1/2 IN.	BR4T015	1.2851	4.8642	0.2919
2 IN.	BR4T020	2.0367	7.7089	0.4625

		----- A-FACTORS -----		
PIPE SIZE	SIGNET FITTING	----- 1 Hz = -----		
		U.S. GPM	LPM	m3/h
<b>COPPER TEE FITTINGS ON COPPER PIPE</b>				
1/2 IN. SK K	CUKT005	0.1354	0.5124	0.0307
1/2 IN. SK L		0.1448	0.5480	0.0329
3/4 IN. SK K	CUKT007	0.2828	1.0704	0.0642
3/4 IN. SK L		0.3140	1.1885	0.0713
1 IN. SK K	CUKT010	0.4718	1.7857	0.1071
1 IN. SK L		0.5007	1.8950	0.1137
1 1/4 IN. SK K	CUKT012	0.6801	2.5743	0.1545
1 1/4 IN. SK L		0.7022	2.6577	0.1595
1 1/2 IN. SK K	CUKT015	1.0533	3.9869	0.2392
1 1/2 IN. SK L		1.0878	4.1171	0.2470
2 IN. SK K	CUKT020	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.	CR4W025	3.1915	12.0798	0.7248
3 IN.	CR4W030	4.9302	18.6606	1.1196
4 IN.	CR4W040	8.6207	32.6293	1.9578
5 IN.	CR4W050	11.4068	43.1749	2.5905
6 IN.	CR4W060	16.2602	61.5447	3.6927
8 IN.	CR4W080	28.1690	106.6197	6.3972
10 IN.	CR4W100	44.4444	168.2222	10.0933
12 IN.	CR4W120	62.5000	236.5625	14.1938
<b>CARBON STEEL WELDOLETS ON SCH 40 PIPE</b>				
2 1/2 IN.	CS4W025	3.1915	12.0798	0.7248
3 IN.	CS4W030	4.9302	18.6606	1.1196
4 IN.	CS4W040	8.6207	32.6293	1.9578
5 IN.	CS4W050	11.4068	43.1749	2.5905
6 IN.	CS4W060	16.2602	61.5447	3.6927
8 IN.	CS4W080	28.1690	106.6197	6.3972
10 IN.	CS4W100	44.4444	168.2222	10.0933
12 IN.	CS4W120	62.5000	236.5625	14.1938
<b>COPPER/BRONZE BRAZOLETS ON SCH 40 PIPE</b>				
2 1/2 IN.	BR4B025	3.1915	12.0798	0.7248
3 IN.	BR4B030	4.9302	18.6606	1.1196
4 IN.	BR4B040	8.6207	32.6293	1.9578
5 IN.	BR4B050	11.4068	43.1749	2.5905
6 IN.	BR4B060	16.2602	61.5447	3.6927
8 IN.	BR4B080	28.1690	106.6197	6.3972
10 IN.	BR4B100	44.4444	168.2222	10.0933
12 IN.	BR4B120	62.5000	236.5625	14.1938
<b>SCH 80 IRON SADDLES ON SCH 80 PIPE</b>				
2 IN.	IR8S020	1.8541	7.0179	0.4211
2 1/2 IN.	IR8S025	2.7003	10.2205	0.6132
3 IN.	IR8S030	4.4709	16.9225	1.0154
4 IN.	IR8S040	7.8329	29.6475	1.7789
5 IN.	IR8S050	10.2389	38.7543	2.3253
6 IN.	IR8S060	14.6699	55.5257	3.3315
8 IN.	IR8S080	25.7511	97.4678	5.8481
10 IN.	IR8S100	39.2157	148.4314	8.9059
12 IN.	IR8S120	56.6038	214.2453	12.8547
<b>SCH 80 IRON SADDLE ON SCH 40 PIPE</b>				
2 IN.	IR8S020	2.2371	8.4676	0.5081
2 1/2 IN.	IR8S025	3.1915	12.0798	0.7248
3 IN.	IR8S030	5.0042	18.9408	1.1364
4 IN.	IR8S040	8.7591	33.1533	1.9892
5 IN.	IR8S050	11.2570	42.6079	2.5565
6 IN.	IR8S060	15.9574	60.3989	3.6239
8 IN.	IR8S080	28.1690	106.6197	6.3972
10 IN.	IR8S100	44.4444	168.2222	10.0933
12 IN.	IR8S120	62.5000	236.5625	14.1938

## A-Factors for DIN Pipes

		----- A-FACTORS -----			
PIPE SIZE	SIGNET FITTING	----- 1 Hz = -----			
		U.S. GPM	LPM	m3/h	CODE
<b>POLYPROPYLENE FITTINGS (DIN/ISO AND BS AND ANSI)</b>					
DN 15	PPMT005	0.1246	0.4716	0.0283	727 310 036
DN 20	PPMT007	0.2165	0.8196	0.0492	727 310 037
DN 25	PPMT010	0.4250	1.6086	0.0965	727 310 038
DN 32	PPMT012	0.7182	2.7185	0.1631	727 310 039
DN 40	PPMT015	1.1704	4.4299	0.2658	727 310 040
DN 50	PPMT020	2.0273	7.6734	0.4604	727 310 041
<b>PVDF FITTINGS (DIN/ISO AND BS AND ANSI)</b>					
DN 15	SFMT005	0.1426	0.5396	0.0324	735 310 036
DN 20	SFMT007	0.2630	0.9954	0.0597	735 310 037
DN 25	SFMT010	0.4389	1.6613	0.0997	735 310 038
DN 32	SFMT012	0.7567	2.8640	0.1718	735 310 039
DN 40	SFMT015	1.3796	5.2219	0.3133	735 310 040
DN 50	SFMT020	2.3159	8.7655	0.5259	735 310 041
<b>11/16/2000</b>					
DN 15	PVMT005	0.1234	0.4671	0.0280	198 150 480
DN 20	PVMT007	0.2471	0.9352	0.0561	198 150 481
DN 25	PVMT010	0.4037	1.5279	0.0917	198 150 482
DN 32	PVMT012	0.7048	2.6679	0.1601	198 150 483
DN 40	PVMT015	1.1571	4.3796	0.2628	198 150 484
DN 50	PVMT020	2.0168	7.6336	0.4580	198 150 485
DN 65	PVMS025	3.4312	12.9870	0.7792	198 150 538
DN 80	PVMS030	4.8037	18.1818	1.0909	198 150 539
DN 100	PVMS040	7.3731	27.9071	1.6744	198 150 540
DN 150	PVMS060	14.6778	55.5556	3.3333	198 150 543
DN 200	PVMS080	29.3556	111.1111	6.6667	198 150 545

### 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



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