

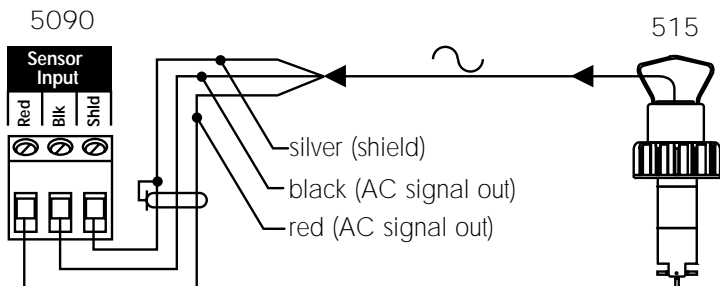


**CAUTION!**  
Follow instructions carefully to avoid personal injury.



= Caution, refer to instruction manual for more details

## 1. Compatible Sensor Wiring



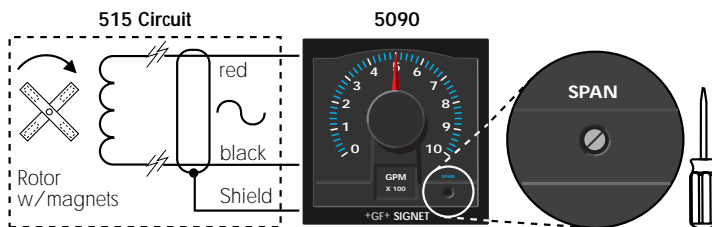
### Technical Notes:

- 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 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.

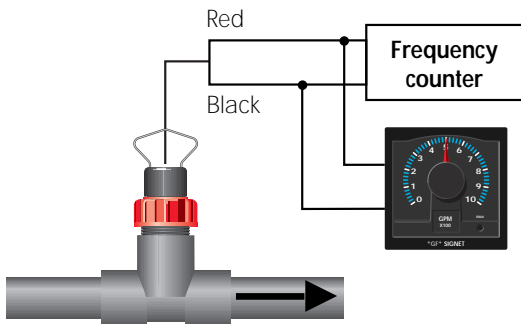


### Equipment Required

- Frequency counter
- +GF+ SIGNET 515 Sensor installed in process line
- Maximum (stable) flow rate induced 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 (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)

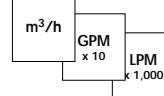
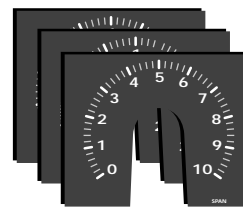
Maximum Flow rate = \_\_\_\_\_

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:

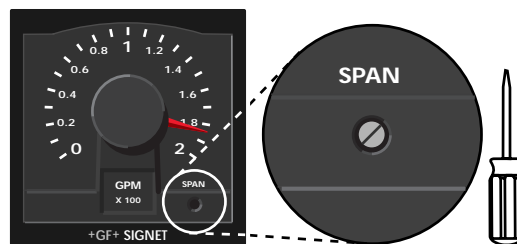
- 0-2
- 0-4
- 0-6
- 0-8
- 0-10
- 0-100



**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

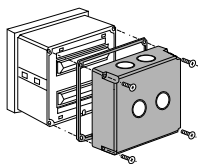
5. **Disconnect frequency counter**, then access and adjust the "SPAN" potentiometer to match the calculated maximum flow rate (step 3). After adjustment, calibration is complete.



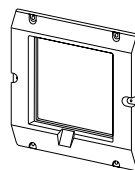
### 3. Parts and Accessories

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

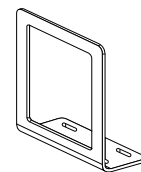
- Front snap-on bezel, #3-5000.525 (code 198 840 226)
- Assorted flow unit/multiplier decal sheet, #3-5090.611 (code 198 840 228)
- 5090 Instruction sheet, #3-5090.090-1 (code 198 869 912)



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



5 x 5 inch adapter plate  
for +GF+ SIGNET retrofit  
#3-5000.399  
(code 198 840 224)



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

### 4. Specifications

#### General

Sensor compatibility: +GF+ SIGNET 515 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

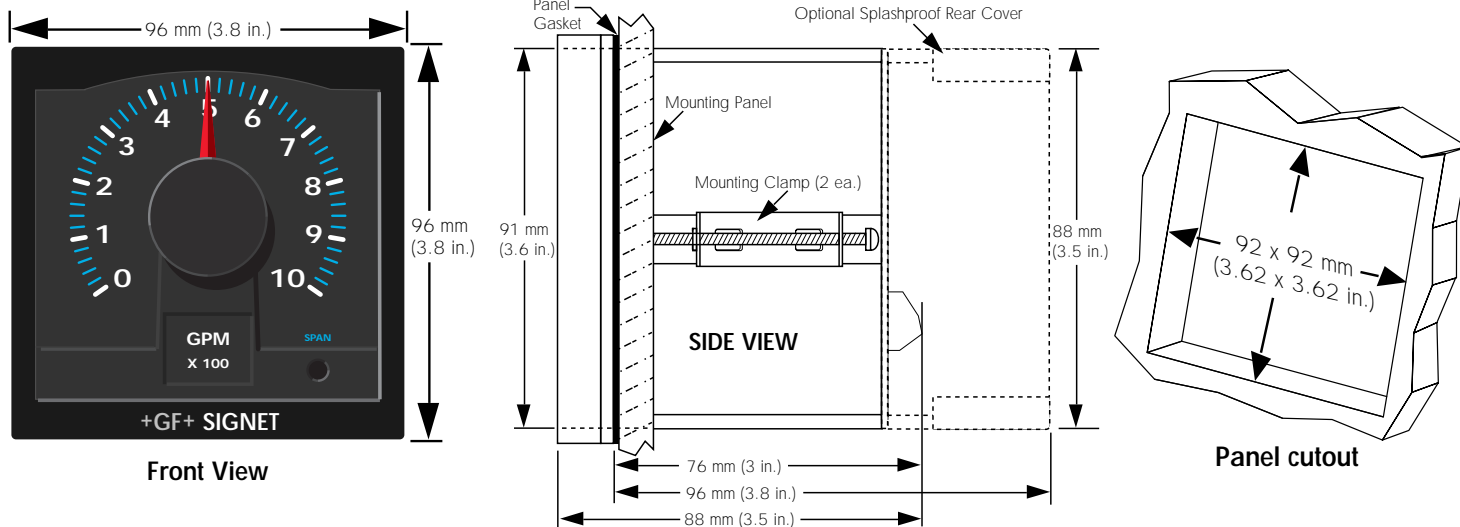
#### Quality Standards

- 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. +GF+ SIGNET 515 Flow Sensor A-Factors

PIPE SIZE	+GF+ SIGNET FITTING	A-FACTORS		
		U.S. GPM	1 Hz = IPM	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

PIPE SIZE	+GF+ SIGNET FITTING	A-FACTORS		
		U.S. GPM	1 Hz = IPM	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	+GF+ SIGNET	----- 1 Hz = -----			
SIZE	FITTING	U.S. GPM	IPM	m3/h	CODE
<b>POLYPROPYLENE FITTINGS (DIN/ISO AND BS AND ANSI)</b>					
DN 15	PPMT005	0.1246	0.4716	0.0283	198.150.522
DN 20	PPMT007	0.2165	0.8196	0.0492	198.150.523
DN 25	PPMT010	0.4250	1.6086	0.0965	198.150.524
DN 32	PPMT012	0.7182	2.7185	0.1631	198.150.525
DN 40	PPMT015	1.1704	4.4299	0.2658	198.150.526
DN 50	PPMT020	2.0273	7.6734	0.4604	198.150.527
DN 65	PPMT025	2.9044	10.9933	0.6596	198.150.560
DN 80	PPMT030	4.5011	17.0368	1.0222	198.150.561
DN 100	PPMT040	6.8905	26.0805	1.5648	198.150.562
DN 125	PPMT050	11.8421	44.8222	2.6893	198.150.563
DN 150	PPMT060	16.2637	61.5583	3.6935	198.150.564
DN 200	PPMT080	29.4147	111.3346	6.6801	198.150.565
<b>PVDF FITTINGS (DIN/ISO AND BS AND ANSI)</b>					
DN 15	SFMT005	0.1426	0.5396	0.0324	198.150.529
DN 20	SFMT007	0.2630	0.9954	0.0597	198.150.530
DN 25	SFMT010	0.4389	1.6613	0.0997	198.150.531
DN 32	SFMT012	0.7567	2.8640	0.1718	198.150.532
DN 40	SFMT015	1.3796	5.2219	0.3133	198.150.533
DN 50	SFMT020	2.3159	8.7655	0.5259	198.150.534
DN 65	SFMT025	3.3210	12.5701	0.7542	198.150.571
DN 80	SFMT030	4.8554	18.3776	1.1027	198.150.572
DN 100	SFMT040	7.4443	28.1765	1.6906	198.150.573
DN 125	SFMT050	13.5403	51.2501	3.0750	198.150.574
DN 150	SFMT060	18.5924	70.3721	4.2223	198.150.575
DN 200	SFMT080	29.4698	111.5431	6.6926	198.150.576
<b>PVC FITTINGS (DIN/ISO) - EUROPE ONLY</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	PVMT025	3.4312	12.9870	0.7792	198.150.538
DN 80	PVMT030	4.8037	18.1818	1.0909	198.150.539
DN 100	PVMT040	7.3731	27.9071	1.6744	198.150.540
DN 150	PVMT060	14.6778	55.5556	3.3333	198.150.543
DN 200	PVMT080	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

**Provided by: KTH Sales, Inc.**

**www.KTH Sales.com ph: 219-736-0060**

**8574 Louisiana Place**

**Merrillville, Indiana - 46410 USA**

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