



Carbon Dioxide Monitor Model 2015 BMC-F 20% CO₂

Description:

The Valtronics Model 2015BMC-F is a Non-Dispersive Infrared gas monitor, designed for continuous monitoring of Carbon Dioxide in the range of zero to 20% CO₂ full scale.

The sample draw type of gas cell is completely unaffected by humidity as long as no condensation occurs (refer to Valtronics Application Note A7- Recommended gas conditioning). The transducer output may be interfaced to any controller unit using its analog 0 to 1 Volt output signal (see data attached).

Model 2015 BMC-F 20% CO₂ Specifications:

Method: N.D. I. R. (Non-dispersive Infra-red) Sample draw type gas cell: Hose barbs for 1/8 inch I.D. tubing. see VTI Application Note A7-Recommended gas conditioning

Gas: Carbon dioxide (CO₂)

Range: 0-20% CO₂

Accuracy: ± 5% of reading from mid to full scale (± 0.5 CO₂ from 0-10% CO₂)

Repeatability: ± 1% of full scale (challenge with same gas sample and assure zero)

External Power Source: 12 Volts D.C. @ 0.5 amp. max.(7.7 to 16.0 VDC absolute min./max.)
see VTI Application Note A3 -How to avoid GROUND LOOPS & EMI

Power Consumption: 3 watts typical @ 12.0 VDC

Output Signal: 0 to 1 volt = 0 to 20% CO₂ (nonlinear scale data attached)

External zero adjustment pot. connected to J1-5. Ref schematic 910021 (20 K pot from J1-5 to signal ground J1-4)

zero adjustment at factory will be done with a **10K resistor from J1-5 to J1-4**. Ref. Procedure B034 revision 11-8-95

Electronic Response Time: 8 seconds typical to a step change in gas concentration, gas response depends on flow rate

Zero Noise at Constant Temperature: Less than 10 mV peak to peak (measured during any 10 to 20 second period)

Zero Drift at Constant Temperature: .. Less than 2% of full scale per 24 hours (random not cumulative)

Zero Drift due to Ambient Temp: Less than 0.5% of full scale per degree Centigrade

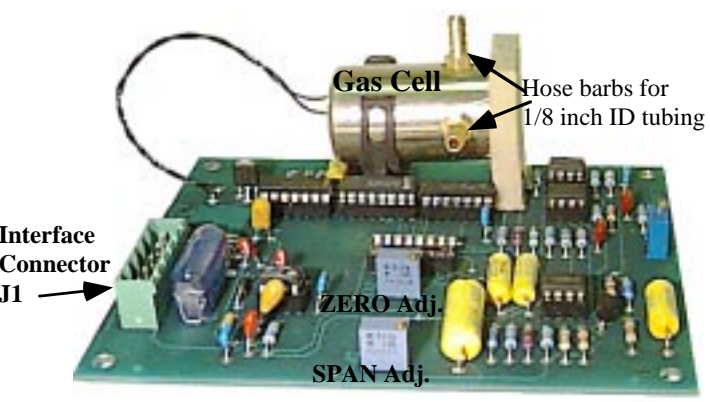
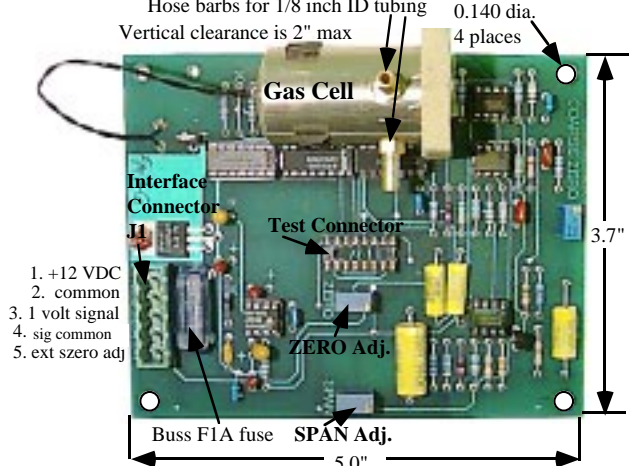
Operating Temperature Range: 5 to 40°C (41° to 104°F) see VTI Application Note A12

Storage Temperature range: -40 to +70°C (-40 to +158°F)

Operating Humidity Range: 5 to 95% RH (non-condensing) see Application Note A7 and A30

Weight: Less than 0.5 pound (0.23 kilogram)

Clearance Dimensions: 4" x 5" x 2" (10.16 cm, x 12.7 cm, x 5.08 cm)



- 1. +12 VDC
- 2. common
- 3. 1 volt signal
- 4. sig common
- 5. ext zero adj



Model 2015 BMC-F 20% CO₂

VALTRONICS 20% & 1 volt full scale, Sample Draw Data: 5-7-92

Gas in %	Output in volts	±0.5% CO ₂		Gas in %	Output in volts	±5% of reading	
		Max.	Min.			Max.	Min.
0.0	0.000	0.025	-0.025				
0.2	0.045	0.070	0.020	10.2	0.754	0.792	0.716
0.4	0.085	0.110	0.060	10.4	0.761	0.799	0.723
0.6	0.121	0.146	0.096	10.6	0.768	0.806	0.730
0.8	0.154	0.179	0.129	10.8	0.775	0.814	0.736
1.0	0.184	0.209	0.159	11.0	0.781	0.820	0.742
1.2	0.211	0.236	0.186	11.2	0.788	0.827	0.749
1.4	0.236	0.261	0.211	11.4	0.794	0.834	0.754
1.6	0.259	0.284	0.234	11.6	0.800	0.840	0.760
1.8	0.281	0.306	0.256	11.8	0.806	0.846	0.766
2.0	0.302	0.327	0.277	12.0	0.812	0.853	0.771
2.2	0.322	0.347	0.297	12.2	0.817	0.858	0.776
2.4	0.340	0.365	0.315	12.4	0.823	0.864	0.782
2.6	0.358	0.383	0.333	12.6	0.828	0.869	0.787
2.8	0.375	0.400	0.350	12.8	0.834	0.876	0.792
3.0	0.391	0.416	0.366	13.0	0.839	0.881	0.797
3.2	0.407	0.432	0.382	13.2	0.844	0.886	0.802
3.4	0.422	0.447	0.397	13.4	0.849	0.891	0.807
3.6	0.436	0.461	0.411	13.6	0.854	0.897	0.811
3.8	0.450	0.475	0.425	13.8	0.859	0.902	0.816
4.0	0.464	0.489	0.439	14.0	0.864	0.907	0.821
4.2	0.477	0.502	0.452	14.2	0.869	0.912	0.826
4.4	0.490	0.515	0.465	14.4	0.874	0.918	0.830
4.6	0.502	0.527	0.477	14.6	0.879	0.923	0.835
4.8	0.514	0.539	0.489	14.8	0.884	0.928	0.840
5.0	0.526	0.551	0.501	15.0	0.889	0.933	0.845
5.2	0.537	0.562	0.512	15.2	0.894	0.939	0.849
5.4	0.548	0.573	0.523	15.4	0.899	0.944	0.854
5.6	0.559	0.584	0.534	15.6	0.904	0.949	0.859
5.8	0.569	0.594	0.544	15.8	0.909	0.954	0.864
6.0	0.579	0.604	0.554	16.0	0.914	0.960	0.868
6.2	0.589	0.614	0.564	16.2	0.919	0.965	0.873
6.4	0.599	0.624	0.574	16.4	0.924	0.970	0.878
6.6	0.608	0.633	0.583	16.6	0.929	0.975	0.883
6.8	0.617	0.642	0.592	16.8	0.933	0.980	0.886
7.0	0.627	0.652	0.602	17.0	0.938	0.985	0.891
7.2	0.635	0.660	0.610	17.2	0.942	0.989	0.895
7.4	0.644	0.669	0.619	17.4	0.947	0.994	0.900
7.6	0.653	0.678	0.628	17.6	0.951	0.999	0.903
7.8	0.661	0.686	0.636	17.8	0.955	1.003	0.907
8.0	0.670	0.695	0.645	18.0	0.958	1.006	0.910
8.2	0.678	0.703	0.653	18.2	0.962	1.010	0.914
8.4	0.686	0.711	0.661	18.4	0.965	1.013	0.917
8.6	0.694	0.719	0.669	18.6	0.968	1.016	0.920
8.8	0.702	0.727	0.677	18.8	0.971	1.020	0.922
9.0	0.710	0.735	0.685	19.0	0.974	1.023	0.925
9.2	0.718	0.743	0.693	19.2	0.978	1.027	0.929
9.4	0.725	0.750	0.700	19.4	0.982	1.031	0.933
9.6	0.733	0.758	0.708	19.6	0.987	1.036	0.938
9.8	0.740	0.765	0.715	19.8	0.993	1.043	0.943
10.0	0.747	0.772	0.722	20.0	1.000	1.050	0.950

Accuracy = ±0.5 % CO₂ from 0 to 10% CO₂ and ±5% of reading from 10 to 20% CO₂
 Revised on 2-15-95