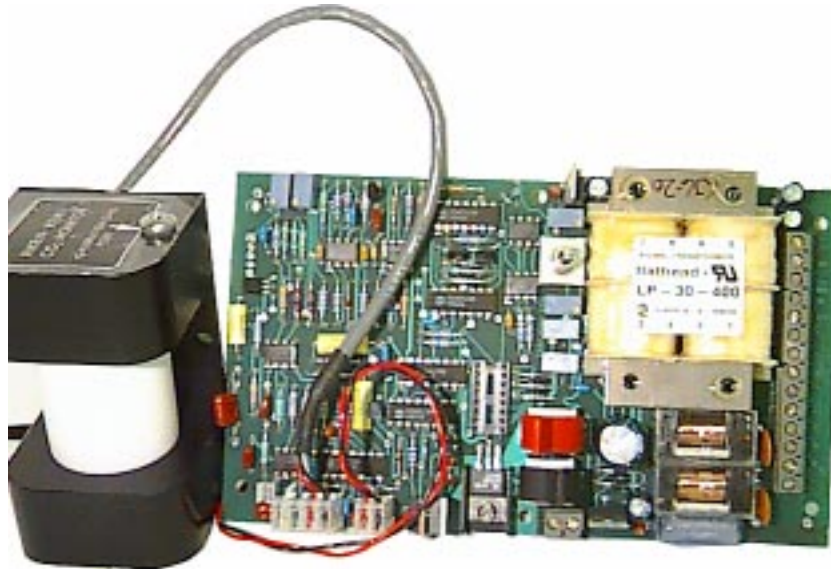




Carbon Dioxide Monitor Model RI-221L 2000 ppm CO₂



#10-32 screw may be replaced by a #10-32 hose barb for gas calibration



Model RI-221L 2000 ppm CO₂

Description:

The Valtronics Model RI-221L is a Non-Dispersive Infrared gas monitor, designed as a remote transducer-transmitter for continuous monitoring of Carbon Dioxide in the range of zero to 2000 ppm CO₂ full scale.

The Optical Diffusion Head is completely unaffected by humidity, and requires no gas sampling pump. The transducer output may be interfaced to any controller unit via the non-linear 0 to 10 Volt or 4 to 20 mA output signals.

Model RI-221L 2000 ppm CO₂ Specifications:

Method:	N.D. I. R. (Non-dispersive Infra-red) gas diffusion sample cell Remote diffusion gas cell on a 8 inch long cable
Gas:	Carbon dioxide (CO ₂)
Range:	0-2,000 ppm (0.2%) CO ₂ by volume
Accuracy:	±50 ppm CO ₂ from 0 to mid scale (0-0.1% CO ₂) ± 5% of reading from mid to full scale (0.1to 0.2% CO ₂)
Repeatability:	± 1% of full scale (challenge with same gas sample and assure zero)
External Power Source:	110/220 VAC (jumper selectable), 50/60 Hz
Power Consumption:	Less than 5 watts at 110 VAC
SET POINT Control Relays:	Dual set points adjustable from 500 ppm CO ₂ to 2000 ppm CO ₂
Relay Contact Rating:	SPDT contacts: non-latching N.C., N.O., 250 VAC or 30 VDC @ 3 amp
Output Signals Voltage:	0 to 10 volt = 0 to 2000 ppm CO ₂ (non-linear scale data attached)
Current Loop:	4 to 20 mA = 0 to 2000 ppm CO ₂ (non-linear scale data attached)
Electronic Response Time:	8 seconds typical to a step change in gas concentration gas response depends on gas diffusion physics
Zero Noise at Constant Temperature: ..	Less than 0.1 volt peak to peak measured on voltage output (measured during any 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 Temperature:	Less than 0.5% of full scale per degree Centigrade
Operating Temperature Range:	5 to 40°C (41° to 104°F) see Application Note A12
Ambient Relative Humidity:	5 to 95% RH non-condensing see Application Note A30
Storage Temperature range:-	40 to +70°C (-40 to +158°F)
Weight:	Less than 0.5 pound
External Clearance Dimensions:	6.7 x 3.95" x 1.5" PCB; four 3/16" dia mounting holes (see poicture)
remote Diffusion Gas Cell:	2.05" x 2.0" x 4.5" on a 8±1 inch long cable with four 3/16" dia mounting holes
.....	Gas cell is 1.0" in diameter (with POREX outer cover)



Model RI-221L 2000 ppm CO₂

VALTRONICS 2000 ppm & 10 volt full scale

CO2 in ppm	Output ±5 % of reading			4-20 mA ±5 % of reading		
	in volts	Max.	Min.	output	Max.	Min.
0	0.000	0.292	-0.292	4.00	4.40	3.60
50	0.310	0.602	0.018	4.50	4.90	4.10
100	0.630	0.922	0.338	5.01	5.41	4.61
150	0.940	1.232	0.648	5.50	5.90	5.10
200	1.260	1.552	0.968	6.02	6.42	5.62
250	1.570	1.862	1.278	6.51	6.91	6.11
300	1.880	2.172	1.588	7.01	7.41	6.61
350	2.190	2.482	1.898	7.50	7.90	7.10
400	2.500	2.792	2.208	8.00	8.40	7.60
450	2.810	3.102	2.518	8.50	8.90	8.10
500	3.120	3.412	2.828	8.99	9.39	8.59
550	3.430	3.722	3.138	9.49	9.89	9.09
600	3.730	4.022	3.438	9.97	10.37	9.57
650	4.020	4.312	3.728	10.43	10.83	10.03
700	4.300	4.592	4.008	10.88	11.28	10.48
750	4.570	4.862	4.278	11.31	11.71	10.91
800	4.840	5.132	4.548	11.74	12.14	11.34
850	5.100	5.392	4.808	12.16	12.56	11.76
900	5.350	5.642	5.058	12.56	12.96	12.16
950	5.590	5.882	5.298	12.94	13.34	12.54
1000	5.840	6.132	5.548	13.34	13.74	12.94
1050	6.080	6.384	5.776	13.73	14.21	13.24
1100	6.320	6.636	6.004	14.11	14.62	13.61
1150	6.570	6.899	6.242	14.51	15.04	13.99
1200	6.820	7.161	6.479	14.91	15.46	14.37
1250	7.060	7.413	6.707	15.30	15.86	14.73
1300	7.310	7.676	6.945	15.70	16.28	15.11
1350	7.550	7.928	7.173	16.08	16.68	15.48
1400	7.790	8.180	7.401	16.46	17.09	15.84
1450	8.010	8.411	7.610	16.82	17.46	16.18
1500	8.230	8.642	7.819	17.17	17.83	16.51
1550	8.430	8.852	8.009	17.49	18.16	16.81
1600	8.620	9.051	8.189	17.79	18.48	17.10
1650	8.800	9.240	8.360	18.08	18.78	17.38
1700	8.970	9.419	8.522	18.35	19.07	17.63
1750	9.150	9.608	8.693	18.64	19.37	17.91
1800	9.320	9.786	8.854	18.91	19.66	18.17
1850	9.500	9.975	9.025	19.20	19.96	18.44
1900	9.690	10.175	9.206	19.50	20.28	18.73
1950	9.860	10.353	9.367	19.78	20.56	18.99
2000	10.000	10.500	9.500	20.00	20.80	19.20

Data taken on 4-24-95

Accuracy = ±50 ppm from 0 to 1000 ppm and ±5% of reading above 1000 ppm



Carbon Dioxide Monitor Model RI-221L 2000 ppm CO₂

