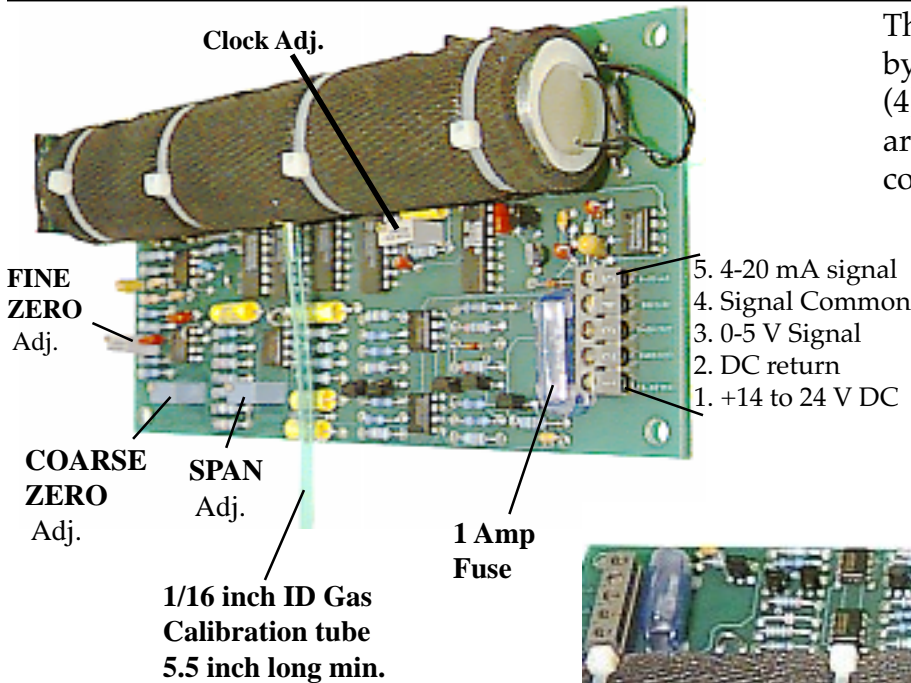


Ammonia Monitor Model 2024 2% NH₃

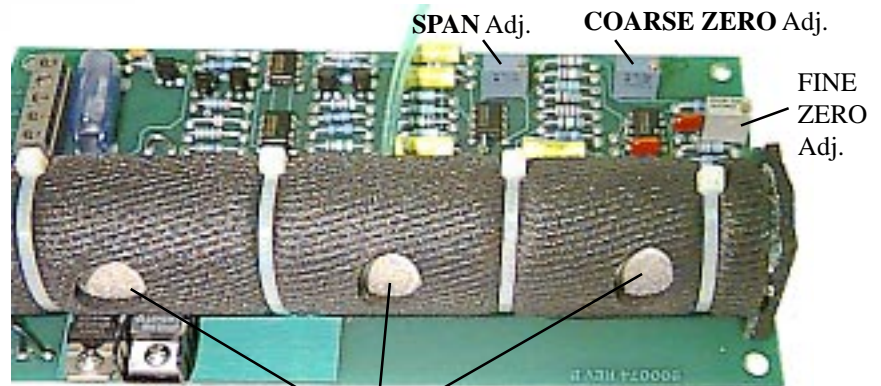
Features:

- OEM optical bench
- Non dispersive infrared (NDIR) technology
- Precision gas calibration kit available
- Fast warm-up
- Industrially robust
- Cost effective - High quality
- Diffusion Gas Cell - no moving parts
- Solid state throughout
- Not affected by water vapor
- Linear voltage and current loop outputs

Model 2024 2% Ammonia (NH₃)



The board is 6.75" long, by 3.5" wide, by 1.75" vertical clearance. It has four (4) 0.194 diameter mounting holes that are on 6.35" x 3.1" centers in the four corners of the board.



Sintered Stainless Steel Diffusion Gas Ports

Application:

- Industrial Safety:

The **VALTRONICS** Model 2024-2% NH₃ is a non-dispersive infrared NH₃ monitor for use as an OEM module. It produces a control signal proportional to NH₃ concentration.



Ammonia Monitor Model 2024 2% NH₃

Description:

The **VALTRONICS** Model 2024-2% NH₃ is a non-dispersive infrared NH₃ monitor for use as an OEM module. It produces a control signal proportional to NH₃ concentration.

The linear signal outputs of 0-5 VDC and 4-20 mA current loop may be used with any central control alarm of air monitoring system.

Specifications: 2024 2% Ammonia (NH₃)

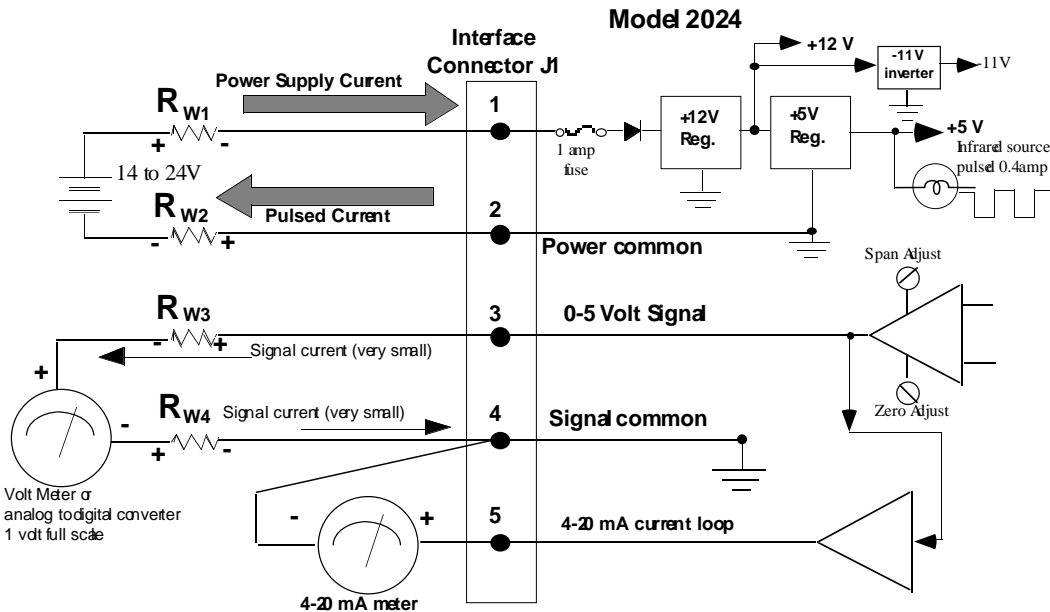
Method: N.D. I. R. (Non-dispersive Infra-red) Gas Diffusion type gas sampling
Gas: **Ammonia (NH₃)**
Range: 0-2% NH₃
Accuracy: ± 5% of reading from 1 to 2% NH₃
..... ± 0.05% NH₃ from 0 to 1% NH₃
Repeatability: ± 1% of full scale (challenge with same gas sample and assure zero)
External Power Source: 14.0 to 24.0 VDC absolute min./max.
Power Consumption: Less than 3 watts @ 15 VDC
Output Signals:
Voltage: 0 to 5 volt = 0 to 2% NH₃ (linear scale data attached)
Current Loop: 4 to 20 mA = 0 to 2% NH₃ (linear scale data attached)
Zero Drift at constant Temperature: . 2% of full scale per 24 hours maximum (random not cumulative)
Zero Noise at constant Temperature: Less than 50 mV peak to peak measured during any 20 second period
..... measured on the 0-5 V signal output terminal with respect to signal common
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)
Operating Humidity Range: 0 to 95% RH non-condensing
Storage Temperature range: -40 to +70°C (-40 to +158°F)
Weight: Less than 0.5 pound
External Dimensions: 7.75 inches x 4.5 inches x 3.75 inches (5.5 inch long gas calibration tube)



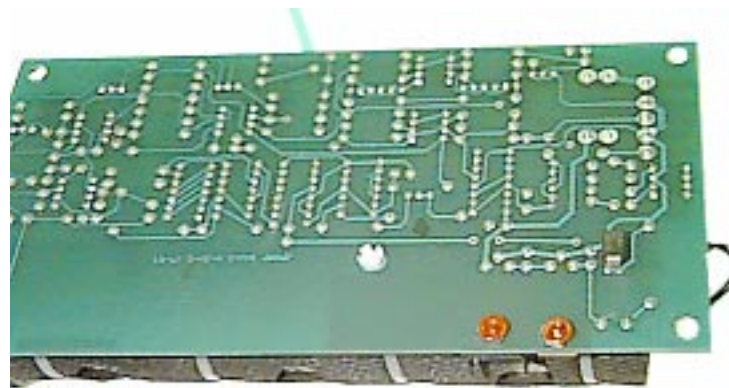
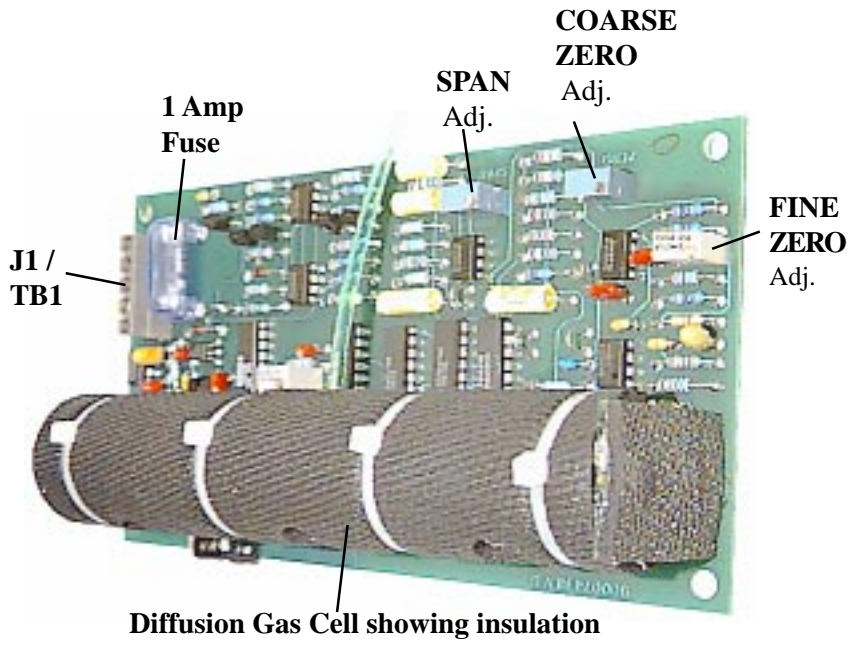
VALTRONICS 2% & 5 volt linear full scale

Gas in %	Output in volts	±0.05% NH ₃		4-20 mA			Gas in %	Output in volts	±5% of reading		4-20 mA		
		Max.	Min.	Output	Max.	Min.			Max.	Min.	Output	Max.	Min.
0.00	0.000	0.125	-0.125	4.00	4.40	3.60	1.02	2.550	2.678	2.423	12.16	12.57	11.75
0.02	0.050	0.175	-0.075	4.16	4.56	3.76	1.04	2.600	2.730	2.470	12.32	12.74	11.90
0.04	0.100	0.225	-0.025	4.32	4.72	3.92	1.06	2.650	2.783	2.518	12.48	12.90	12.06
0.06	0.150	0.275	0.025	4.48	4.88	4.08	1.08	2.700	2.835	2.565	12.64	13.07	12.21
0.08	0.200	0.325	0.075	4.64	5.04	4.24	1.10	2.750	2.888	2.613	12.80	13.24	12.36
0.10	0.250	0.375	0.125	4.80	5.20	4.40	1.12	2.800	2.940	2.660	12.96	13.41	12.51
0.12	0.300	0.425	0.175	4.96	5.36	4.56	1.14	2.850	2.993	2.708	13.12	13.58	12.66
0.14	0.350	0.475	0.225	5.12	5.52	4.72	1.16	2.900	3.045	2.755	13.28	13.74	12.82
0.16	0.400	0.525	0.275	5.28	5.68	4.88	1.18	2.950	3.098	2.803	13.44	13.91	12.97
0.18	0.450	0.575	0.325	5.44	5.84	5.04	1.20	3.000	3.150	2.850	13.60	14.08	13.12
0.20	0.500	0.625	0.375	5.60	6.00	5.20	1.22	3.050	3.203	2.898	13.76	14.25	13.27
0.22	0.550	0.675	0.425	5.76	6.16	5.36	1.24	3.100	3.255	2.945	13.92	14.42	13.42
0.24	0.600	0.725	0.475	5.92	6.32	5.52	1.26	3.150	3.308	2.993	14.08	14.58	13.58
0.26	0.650	0.775	0.525	6.08	6.48	5.68	1.28	3.200	3.360	3.040	14.24	14.75	13.73
0.28	0.700	0.825	0.575	6.24	6.64	5.84	1.30	3.250	3.413	3.088	14.40	14.92	13.88
0.30	0.750	0.875	0.625	6.40	6.80	6.00	1.32	3.300	3.465	3.135	14.56	15.09	14.03
0.32	0.800	0.925	0.675	6.56	6.96	6.16	1.34	3.350	3.518	3.183	14.72	15.26	14.18
0.34	0.850	0.975	0.725	6.72	7.12	6.32	1.36	3.400	3.570	3.230	14.88	15.42	14.34
0.36	0.900	1.025	0.775	6.88	7.28	6.48	1.38	3.450	3.623	3.278	15.04	15.59	14.49
0.38	0.950	1.075	0.825	7.04	7.44	6.64	1.40	3.500	3.675	3.325	15.20	15.76	14.64
0.40	1.000	1.125	0.875	7.20	7.60	6.80	1.42	3.550	3.728	3.373	15.36	15.93	14.79
0.42	1.050	1.175	0.925	7.36	7.76	6.96	1.44	3.600	3.780	3.420	15.52	16.10	14.94
0.44	1.100	1.225	0.975	7.52	7.92	7.12	1.46	3.650	3.833	3.468	15.68	16.26	15.10
0.46	1.150	1.275	1.025	7.68	8.08	7.28	1.48	3.700	3.885	3.515	15.84	16.43	15.25
0.48	1.200	1.325	1.075	7.84	8.24	7.44	1.50	3.750	3.938	3.563	16.00	16.60	15.40
0.50	1.250	1.375	1.125	8.00	8.40	7.60	1.52	3.800	3.990	3.610	16.16	16.77	15.55
0.52	1.300	1.425	1.175	8.16	8.56	7.76	1.54	3.850	4.043	3.658	16.32	16.94	15.70
0.54	1.350	1.475	1.225	8.32	8.72	7.92	1.56	3.900	4.095	3.705	16.48	17.10	15.86
0.56	1.400	1.525	1.275	8.48	8.88	8.08	1.58	3.950	4.148	3.753	16.64	17.27	16.01
0.58	1.450	1.575	1.325	8.64	9.04	8.24	1.60	4.000	4.200	3.800	16.80	17.44	16.16
0.60	1.500	1.625	1.375	8.80	9.20	8.40	1.62	4.050	4.253	3.848	16.96	17.61	16.31
0.62	1.550	1.675	1.425	8.96	9.36	8.56	1.64	4.100	4.305	3.895	17.12	17.78	16.46
0.64	1.600	1.725	1.475	9.12	9.52	8.72	1.66	4.150	4.358	3.943	17.28	17.94	16.62
0.66	1.650	1.775	1.525	9.28	9.68	8.88	1.68	4.200	4.410	3.990	17.44	18.11	16.77
0.68	1.700	1.825	1.575	9.44	9.84	9.04	1.70	4.250	4.463	4.038	17.60	18.28	16.92
0.70	1.750	1.875	1.625	9.60	10.00	9.20	1.72	4.300	4.515	4.085	17.76	18.45	17.07
0.72	1.800	1.925	1.675	9.76	10.16	9.36	1.74	4.350	4.568	4.133	17.92	18.62	17.22
0.74	1.850	1.975	1.725	9.92	10.32	9.52	1.76	4.400	4.620	4.180	18.08	18.78	17.38
0.76	1.900	2.025	1.775	10.08	10.48	9.68	1.78	4.450	4.673	4.228	18.24	18.95	17.53
0.78	1.950	2.075	1.825	10.24	10.64	9.84	1.80	4.500	4.725	4.275	18.40	19.12	17.68
0.80	2.000	2.125	1.875	10.40	10.80	10.00	1.82	4.550	4.778	4.323	18.56	19.29	17.83
0.82	2.050	2.175	1.925	10.56	10.96	10.16	1.84	4.600	4.830	4.370	18.72	19.46	17.98
0.84	2.100	2.225	1.975	10.72	11.12	10.32	1.86	4.650	4.883	4.418	18.88	19.62	18.14
0.86	2.150	2.275	2.025	10.88	11.28	10.48	1.88	4.700	4.935	4.465	19.04	19.79	18.29
0.88	2.200	2.325	2.075	11.04	11.44	10.64	1.90	4.750	4.988	4.513	19.20	19.96	18.44
0.90	2.250	2.375	2.125	11.20	11.60	10.80	1.92	4.800	5.040	4.560	19.36	20.13	18.59
0.92	2.300	2.425	2.175	11.36	11.76	10.96	1.94	4.850	5.093	4.608	19.52	20.30	18.74
0.94	2.350	2.475	2.225	11.52	11.92	11.12	1.96	4.900	5.145	4.655	19.68	20.46	18.90
0.96	2.400	2.525	2.275	11.68	12.08	11.28	1.98	4.950	5.198	4.703	19.84	20.63	19.05
0.98	2.450	2.575	2.325	11.84	12.24	11.44	2.00	5.000	5.250	4.750	20.00	20.80	19.20
1.00	2.500	2.625	2.375	12.00	12.40	11.60							

Accuracy = ±5% of reading from 1% NH₃ to 2% NH₃ and ±0.05% NH₃ from 0 to 1% NH₃ Chart modified on 4-24-97



• The pulsating power supply return current will take the path of least resistance. If the wire from pin# 2 is large and short it will travel through it and not in the signal path which would induce an offset and noise. The SIGNAL COMMON must have a separate wire for signal current to flow through. There must be a minimum of four (4) wires. A three (3) wire connection where one wire is used for both power supply and signal common will not work even with the current loop.



Circuit Side of printed circuit board