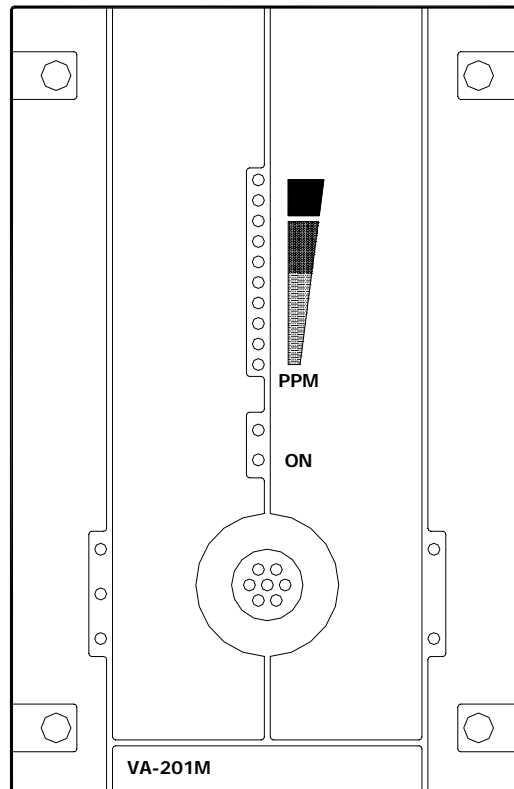


NSGV SERIES "VA-201M" STAND ALONE GAS MONITOR I, O & M MANUAL

NSGV Series "VA-201M" Stand Alone Gas Monitor



VA-201M Specifications

Power	17 - 27 VAC, 24-38 VDC, 250 ma
Relay Output Rating	5A, 30 Vdc or 250 Vac (resistive load)
Outputs	2 DPDT relays
Color	Gray
Audible Alarm	65 dBA at 3 feet / silence key
Alarm Levels	25 & 200 ppm (CO), .72 & 2 (NO2)
Time Delays	0, 1, 5, or 10 minutes
Gas Level Display	10-step LED
Normal Operation	Green LED
Failure Indication	Yellow LED
Size	8 1/2" x 5 1/4" x 2 1/4"
Weight	1 pound
Accuracy	3%

National System of Garage Ventilation
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NSGV VA201M STAND-ALONE GAS MONITOR

I, O & M MANUAL

UNPACKING

After opening the package and removing the equipment and components, make sure that you have all the items described on the order form or packing slip.

INSTALLATION GUIDELINES

These guidelines must be strictly observed to assure that the equipment will work properly. If they are not applied, NSGV will not recognize any liability in case of improper operation.

- Make sure to locate all units easily accessible for proper service.
- Avoid any location where units could be subject to vibrations.
- Avoid any location close to any electromagnetic interference.
- Verify local requirements and existing regulations which may affect the choice of location.

DETERMINATION OF NUMBER OF SYSTEMS

GAS DETECTED		RADIUS OF SURVEILLANCE	AREA COVERED
CO	Carbon Monoxide	50 Feet	7,854 Square Feet
NO ²	Nitrogen Dioxide	50 Feet	7,854 Square Feet

SURFACE-MOUNT INSTALLATION

DETECTED GAS		RELATIVE DENSITY (air=1)	INSTALLATION HEIGHT
CO	Carbon Monoxide	0.968	3 – 5 ft. from floor
NO ²	Nitrogen Dioxide	1.58 (cold)	*1 – 3 ft. from ceiling
NO	Nitric Oxide	1.04	1 ft. from floor
H ²	Hydrogen	0.07	1 ft. from ceiling
CL ²	Chlorine	2.50	1 ft. from floor
H ² S	Hydrogen Sulfide	1.19	1 ft. from floor
O ²	Oxygen	1.43	3 – 5 ft. from floor
HCL	Hydrogen Chloride	1.30	1 ft. from floor
HCN	Hydrogen Cyanide	0.932	1 ft. from ceiling
ETO	Ethylene Oxide	1.50	1 ft. from floor
SO ²	Sulfur Dioxide	2.25	1 ft. from floor
R11	Refrigerants	5.04	1 ft. from floor
R12		4.20	
R22		3.11	
R134A		3.52	
COMB	Most combustibles are heavier than air, with the exception of methane, hydrogen, ethylene, and acetylene. For gases that are heavier than air, sensors should be installed approximately 1 ft. from the floor. For combustibles that are lighter than air, sensors should be installed 1 ft. from ceiling, close to the potential leak source.		

* May differ in certain applications. Hot NO² from exhaust systems is lighter than ambient air.

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RANGE AND ALARM LEVELS

GAS DETECTED		RANGE	ALARM A	ALARM B
CO	Carbon Monoxide	0 – 250 PPM	25 PPM	200 PPM
NO²	Nitrogen Dioxide	0 – 10 PPM	0.72 PPM	2 PPM
NO	Nitric Oxide	0 – 102 PPM	25 PPM	35 PPM
H²	Hydrogen	0 -2.5% Vol.	1.00% Vol.	2.00% Vol.
CL²	Chlorine	0 – 15 PPM	0.5 PPM	1.0 PPM
H²S	Hydrogen Sulfide	0 – 50 PPM	15 PPM	15 PPM
O²	Oxygen	0 – 25% Vol.	*19.5% Vol.	22.0% Vol.
HCL	Hydrogen Chloride	0 – 50 PPM	3 PPM	4 PPM
HCN	Hydrogen Cyanide	0 – 50 PPM	5 PPM	9 PPM
ETO	Ethylene Oxide	0 – 20 PPM	1.0 PPM	5 PPM
SO²	Sulfur Dioxide	0 – 10 PPM	2 PPM	5 PPM
R11	Refrigerants	0 – 1000 PPM	500 PPM	750 PPM
R12				
R22				
R134A				
COMB	Combustibles	0 – 100% LEL	25% LEL	50% LEL

A different alarm level may have been programmed in order to satisfy the constraint of a particular application.

SPECIFICATIONS

Power Requirements: 17 – 27 Vac, 24 – 38 Vdc, 250mA
 Operating Temperature Range: 32°F - 100°F
 Operating Humidity Range: 15 to 90% RH (non-condensing)
 Outputs: 2 DPDT optional relays
 Audible Alarm: 65 dBa @ 3 ft.
 Alarm Levels: High and Low
 Time Delays: 0, 1, 5, or 10 minutes
 Display: 10-step LED
 Visual Indicators: Failure Indicator; Yellow LED
 Normal Operation: Green LED
 Relay Output Rating: 5A, 30 VDC or 250 VAC (resistive load)
 Dimensions: 8 3/8" (H) x 5 1/2" (W) x 2 1/4" (D)
 Weight: 1 pound

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USER INTERFACE

1. After powering ON the monitor, the first 2 Red LEDs will blink for two minutes during the war-up period.
2. The Yellow LED indicates a system failure. If this occurs, you should contact your local NSGV representative for further assistance.
3. Each Red LED represents 10% of the scale.
4. When the gas concentration reaches the first alarm level (Alarm A), the second Red Led from the top blinks and the first level relay is activated.
5. If the gas concentration reaches the second alarm (Alarm B), the first Red LED from the top will blink. The second level relay and audible alarm are activated.
6. When the gas concentration exceeds the scale, all Red LEDs flash On and Off.

RELAY OUTPUTS

The relay outputs are set at alarm levels based on the type of gas to be detected. The alarm level settings can be modified as follows:

Note: See Range and Alarm Levels chart on page 2.

FIRST LEVEL (Alarm A)

Connect a voltmeter to TP1 Pin 3 (+) and Pin 6 (-).

Adjust P1 to $V_{dc} = (\text{Alarm level A} \times 4 / \text{scale of reading})$

Example for a VA201M-CO:

$$V_{dc} = (25 \times 4 / 250) = 0.4 \text{ Vdc}$$

SECOND LEVEL (Alarm B)

Connect a voltmeter to TP1 Pin 2 (+) and Pin 6 (-).

Adjust P2 to $V_{dc} = (\text{Alarm level B} \times 4 / \text{scale of reading})$.

Example for a VA201M-CO:

$$V_{dc} = (200 \times 4 / 250) = 3.2 \text{ Vdc}$$

ADJUSTMENTS

The VA201M comes as plug and play out of the box. Field adjustment is possible. All adjustments are factory set. If required, consult the additional information on page 4 for verification of the time delays and relay output.

TIME DELAYS

Switches 4 and 5 of DIP1 determine the time delay set prior to and after activation of the alarms.

Time Delay Settings on DIP1

	0 Min.	1 Min.	5 Min.	10 Min.
Switch 4	OFF	OFF	ON	ON
Switch 5	OFF	ON	OFF	ON

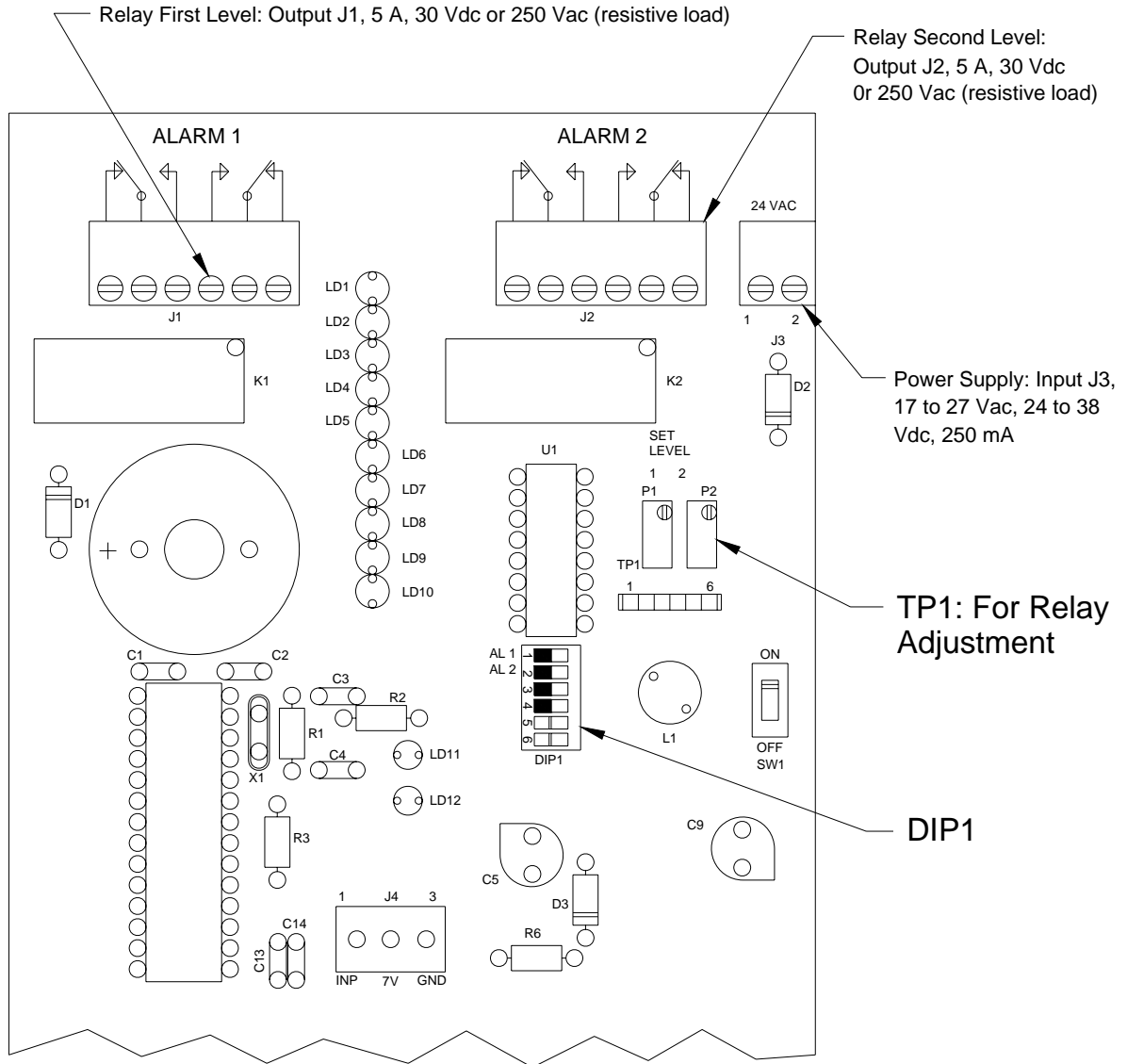
WARNING: To validate the new configuration, restart the unit using the SW1 switch.

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WIRING DIAGRAM



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