

Multi-Point Type

System Configuration

Gas detection & alarm system V series/V2 series are compact systems which flexibly combine indicator units, alarm units, and various gas detector heads.

V series Indicator Unit/Alarm Unit



* Photo shows single case specification.

Type explanation for Indicator unit

V		-		-	
Detection Principle		Alarm Type			
H	Hot wire semiconductor	1	1-stage alarm	0	Fixed in the standard case
C	Catalytic combustion	2	2-stage alarm	1	For panel instrumentation
A	Thin film semiconductor				
ZN	Semiconductor for NH ₃				
D	Controlled potential electrolysis				
T	Thermal conductivity				
O	Galvanic cell				
G	Orgastor				
M	Analog input				

Type explanation for Alarm unit

VAL		-	
Detection Principle		Alarm Type	
1	1-stage alarm	0	Fixed in the standard case
2	2-stage alarm	1	For panel instrumentation

V2 series Indicator Unit/Alarm Unit



Type explanation for Indicator unit

V2		-		-	
Detection Principle		Alarm Type			
H	Hot wire semiconductor	1	1-stage alarm	0	Fixed in the standard case
C	Catalytic combustion	2	2-stage alarm	1	For panel instrumentation
D	Controlled potential electrolysis				
T	Thermal conductivity				
O	Galvanic cell				
M	Analog input				

Type explanation for Alarm unit

VAL		-	
Alarm Type			
1	1-stage alarm	0	Fixed in the standard case
2	2-stage alarm	1	For panel instrumentation

Single case for panel instrumentation

Each single case incorporates an indicator unit and an alarm unit of the V series/V2 series. The case can be embedded in an existing instrumentation panel.



Floor type

This is a compact floor type system whose panel is equipped with single cases incorporating indicator units and an alarm unit.



Wall mount type

This system has a wall mount case incorporating indicator units and an alarm unit of the V series/V2 series.



V-810 (6-point type)

Indicator Unit Type

Detector Heads

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For combustible gas (high sensitive) VH V2H	VH:KD-2A·KD-3A V2H:KD-5A·KD-5B	Diffusion Eductor suction	Hot wire semiconductor sensor	Combustible gas (LPG, CH ₄ , etc.)
	VH:PE-2CC V2H:PD-5N·PD-5F	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For combustible gas (explosion-proof) VC V2C	VC:KD-2A·KD-3A V2C:KD-5A·KD-5B	Diffusion	Catalytic combustion sensor	Combustible gas (LPG, CH ₄ , etc.)
	VC:PE-2CC V2C:PD-5N·PD-5F	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For Cl ₂ VA	KD-2AB	Diffusion	Thin film semiconductor sensor	Cl ₂
	KD-2AA	Eductor suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For NH ₃ VZN	KD-2AS	Diffusion	Semiconductor sensor for NH ₃	NH ₃
	PE-2CZ	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For toxic gas VD V2D	VD:KS-2D·KCM-3A V2D:KS-2D·KD-5D	Diffusion	Controlled potential electrolysis sensor	Various semiconductor manufacturing gases/ Various toxic gases
	VD:PS-2DP V2D:PS-2DP·PS-4DP	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For inert gas/high concentration gas VT V2T	VT:KD-2A·KD-3A V2T:KD-5B	Diffusion Eductor suction	Thermal conductivity sensor	H ₂ , He, Ar, CO ₂ , CH ₄
	VT:PE-2CC V2T:PD-5N·PD-5F	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For O ₂ VO V2O	VO:KS-2O V2O:KS-2O·KD-5O	Diffusion	Galvanic cell sensor	O ₂
	VO:PS-2OE V2O:PS-2OE	Eductor suction		
	VO:PS-2OP V2O:PS-2OP	Pump suction		

Indicator Unit Type	Model	Sampling Method	Detection Principle	Main Gas Detected
For oil/organic solvent VG	OR-2A	Diffusion	Orgastor sensor	Oil, Organic solvent

Indicator Unit Type	Model
For analog input VM V2M	VM:For 4-20mA/DC input V2M:For 4-20mA/DC input

Indicator Unit/Alarm Unit

Outline

An indicator unit supplies power to a gas detector head and processes signals from it. The unit indicates gas concentration in a LCD bar-graph level meter, automatically gives an alarm at preset gas concentrations, and transmits signals to an alarm unit and

external outputs (contact output/analog output). It is the center of the V series gas detection & alarm system. The alarm unit receives signals from V series indicator units (no contact output), gives an alarm (buzzer and lamp), and outputs control signals.

Exterior Features

V series



Indicator unit specifications

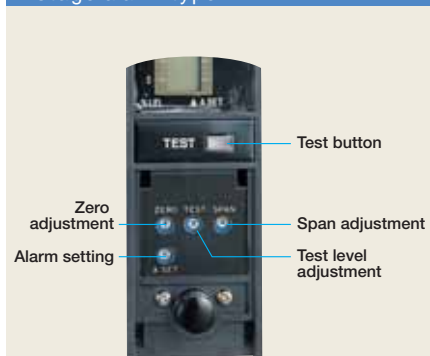
Item	Model	VH V2H	VC V2C	VA	VZN	VD V2D	VT V2T	VO V2O	VG	VM V2M
Detection Principle		Hot wire semiconductor	Catalytic combustion	Thin film semiconductor	Semiconductor for NH ₃	Controlled potential electrolysis	Thermal conductivity	Galvanic cell	Orgastor	Analog
Gas Detected		Combustible gas (LPG, CH ₄ , etc.)	Combustible gas (LPG, CH ₄ , etc.)	Cl ₂	NH ₃	Various semiconductor manufacturing gases/ Various toxic gases	H ₂ , He, Ar, CO ₂ , CH ₄	O ₂	Oil, Organic solvent	4-20mA/DC input
Detection Range	Depends on the detector head specifications									
Gas Concentration Indication	LCD bar-graph level meter									
Alarm Set Value	Adjustable within the detection range								Alarm at 0.5ml of Hexane	Adjustable within the detection range
Alarm Accuracy	Combustible gas: ±25% of an Alarm Set Value Toxic gas: ±30% of an Alarm Set Value Oxygen: ±1.0vol% of an Alarm Set Value (Conforms to JIS T 8201)									
Response Time	Combustible gas: 30s or less at 160% concentration of an Alarm Set Value Toxic gas: 60s or less at 160% concentration of an Alarm Set Value Oxygen: 5s or less at 10vol% (oxygen deficiency)								30s or less after the adhesion of an oil droplet	—
Alarm Indication	Power Lamp	Under normal conditions: Green lamp lights up, On trouble: Green lamp goes out, Upon energization: Green lamp flashes for 30s								
External Contact Output	Alarm Lamp	On alarm: Red lamp flashes, On reset: Red lamp lights up and holds the condition (Self-holding type is standard, but automatic recovery type is available upon request.)								
Output	Contact Output	1c no-voltage (1A@100V AC, resistance load), 1a for the trouble contact								
	Recorder (Analog) Output	4-20mA (standard), 0-10mV, 1-5V (option *), Digital output (option) V2HG : 0-6-12V only								
Alarm Delay Circuit	Approx. 30s of delay is available (option)									
Operating Temperature Range	-10°C to 40°C									
Power Source	24V DC±10%									
Power Consumption	Approx. 5W									
Dimensions	W36×H144×D150mm									
Weight	Approx. 650g (including 450g single case)									

* The specifications above apply to the unit with the single case.

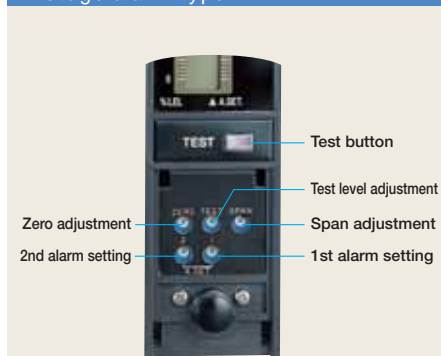
* V2 series have additional functions of indicator backlight, maintenance mode, and peak hold function as standard, though V series do not.

*1 V2 series are not capable of 0-10mV analog output.

1-stage alarm type



2-stage alarm type



V2 series



Alarm unit specifications

Item	Model	VAL-1	VAL-2
Number of Alarm Stages		1 stage	2 stages
Connectable Indicator Unit		V series/V2 series (1-stage alarm type)	V series/V2 series (2-stage alarm type)
Alarm Indication	Alarm Lamp	Under normal conditions: Stays out, On gas alarm from one or more indicator units: Red lamp lights up	
	Trouble Lamp	Under normal conditions: Stays out, On trouble with one or more indicator units: Red lamp lights up	
	Buzzer	On gas alarm: Intermittent buzzer on gas alarm from one or more indicator units (Self-holding type) On trouble: Continuous buzzer on trouble with one or more indicator units	
	(Reset)	(The buzzer stops by a reset operation, and automatically recovers.)	
External Control Contact	Alarm Contact	1c no-voltage (1A@100V AC, resistance load)	1c for both 1st and 2nd stage (1A@100V AC, resistance load)
	Trouble Contact	1a no-voltage (1A@100V AC, resistance load)	
	Buzzer Contact	1a no-voltage (1A@100V AC, resistance load)	
Operating Temperature Range	-10°C to 40°C		
Power Source	24V DC±10%		
Power Consumption	Approx. 3W		
Dimensions	W36×H144×D150mm		
Weight	Approx. 610g (including 450g single case)		

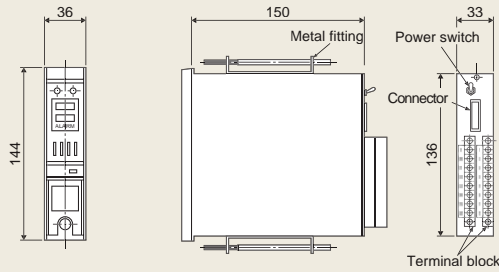
* The specifications above apply to the unit with the single case.

Multi-Point Type

For Panel Instrumentation

Single Case (Common to V series/V2 series)

Alarm unit dimensions

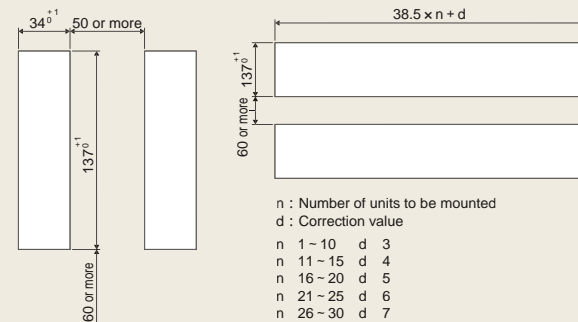


Terminal arrangements

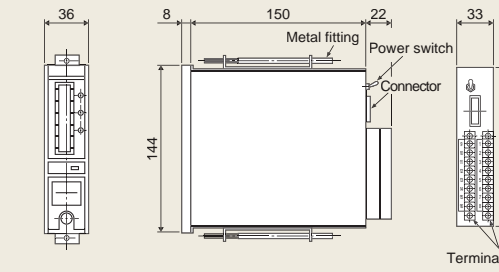
1	P	Power source:
2	N	24V DC
3	TR	Trouble: 1a
4	TC	1A@100V AC
5	AS	External reset
6		
7	N	
8		
9	ZA2	Alarm 2:
10	ZC2	1c no-voltage
11	ZB2	1A@100V AC
12	ZA1	Alarm 1:
13	ZC1	1c no-voltage
14	ZB1	1A@100V AC
15	BZ	Buzzer contact:
16	BC	1a no-voltage
		1A@100V AC

Panel cutout dimensions

For one-by-one instrumentation For multi-point close instrumentation



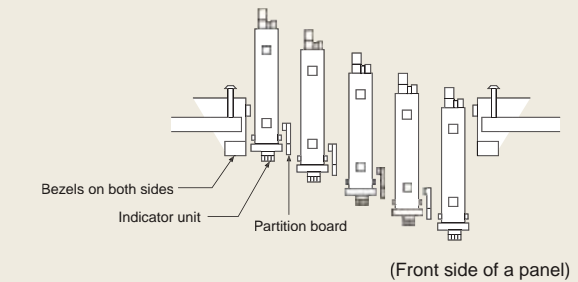
Indicator unit dimensions



Terminal arrangements

1	P	Power source:
2	N	24V DC
3	PA	
4	PB	
5	A	
6	B	Gas detector head
7	C	
8	D	
9	ZC	Common
10	ZA2	2nd alarm:
11	ZB2	1c
12	ZA1	1st alarm:
13	ZB1	1c
14	TZ	Trouble: 1a
15	G	
16	H	Analog output

Panel instrumentation of single cases (for close instrumentation)



Floor Type

V-830

Outline

V-830 gas detector is a compact floor type system of which panel is equipped with single cases incorporating indicator units and an alarm unit, and is best suited for multi-point monitoring.



Use example



Wall (Panel) Mount Type

V-810·VB-810



VB-810 (incorporating a backup power supply unit)



Cases are for 3/6 points.

Outline

V-810 gas detector is a compact system of wall (panel) mount type which combines indicator units, an alarm unit, and various gas detector heads of the V series.

Detects combustible gases, toxic/semiconductor manufacturing gases, and oxygen (oxygen deficiency) and gives an alarm signal when the gas concentration goes over a set value (or under a set value for oxygen deficiency), so as to prevent disasters such as gas explosion, poisoning, and oxygen deficiency.

VB-810 incorporates a backup power supply unit.

Features

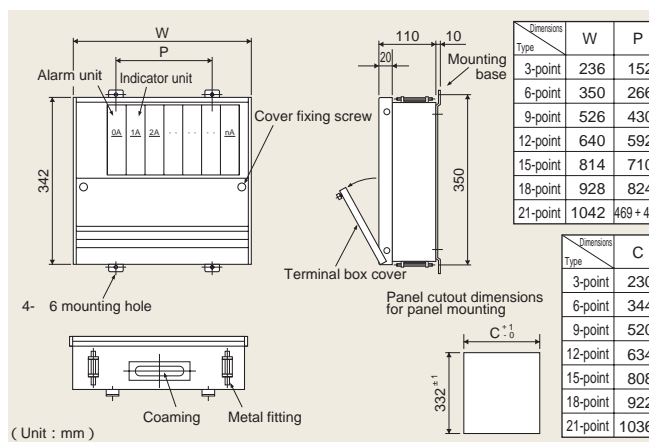
- Compact design.
- Standard cases for 3/6/9/12/15/18/21 points are available.
- Wide variety of input power sources.
- Can be equipped with a Zener barrier.
- 2-stage alarm is also available.
- Combination of the V series/V2 series units allows detection of and alarm for various gases.

Specifications

Item	Model	V-810
Gas Detected and Detection Range		As per specifications
Gas Concentration Indication		LCD bar-graph level meter
Alarm Set Value		Adjustable within the detection range (Except hexane for which 0.5ml is the Alarm Set Value)
Alarm Accuracy		Combustible gas: ±25% of an Alarm Set Value Toxic gas: ±30% of an Alarm Set Value Oxygen: ±1.0vol% of an Alarm Set Value (Conforms to JIS T 8201)
Alarm Indication		Indicator Unit
		Alarm Unit
Contact Output		Gas Leakage Alarm Alarm lamp (red) flashes* (Lights up after Reset) Lights up red and buzzer sounds intermittently on alarm from at least one indicator unit (Buzzer stops after Reset)
		Trouble Alarm Power lamp (green) goes out (Automatic recovery) Lights up red and buzzer sounds continuously on trouble with at least one indicator unit (Buzzer stops after Reset)
* Self-holding type is standard for the alarm indication of the indicator units and the alarm units. (Automatic recovery type is also available.)		
External Output *1		Indicator unit (individual alarm): 1st stage (1a), 2nd stage (1a), 1A@100V AC (resistance load) Alarm unit (collective alarm): Alarm 1 (1c), Alarm 2 (1c), 1A@100V AC (resistance load), Trouble (1a), Buzzer (1a)
Operating Temperature Range		-10°C to 40°C
Power Source		100-110V AC±10%, 200/220V AC±10%, 24V DC±10%
Power Consumption		Diffusion type: (25+5n)VA, Suction type: (25+10n)VA (n is the number of the detection points)
Others		1.Green lamp flashes for 30s upon energization 2.Alarm delay (option) 3.Linearization (option) 4.Low flow alarm (option for V2 series)

*1 V2 series are not capable of 0-10mV output.

Dimensions (V-810)



Terminal Arrangements (V-810)

