COSMOS

1 Point type Gas Detection & Alarm System
NV-100 series

Small and compact, yet Multi-functions

Features

Highly reliable sensors - more than 40 years of experience in sensor manufacturing

Space saved indicator / alarm unit design

Easy to read bar-graphic LCD indicator with backlight.

Protection for false alarm (with alarm delay, zero suppression function)

Easy to operate multi-maintenance functions (Auto-zero, simple span adjustment, etc.)

With 4 relays for direct control of external device, 4-20mA analog output.

With self-diagnostic function

With backup power source (Option)

Combustible gases
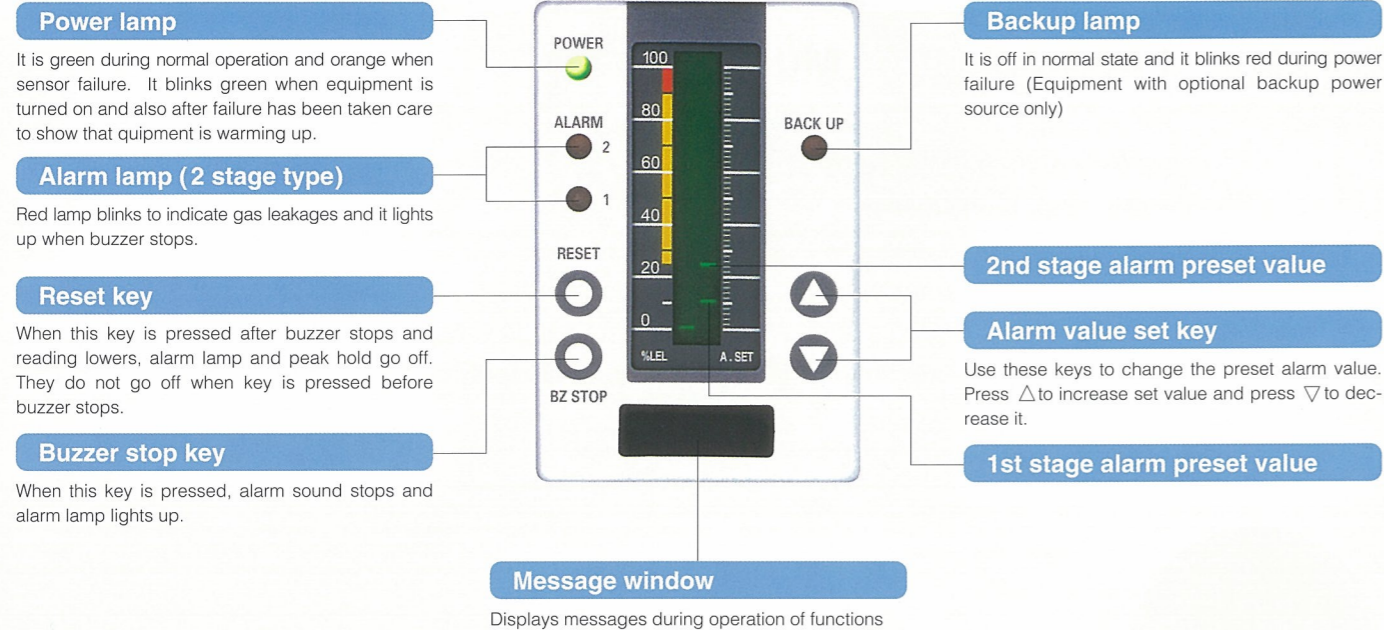
Toxic gases
Semiconductor manufacturing gases

O2 concentration
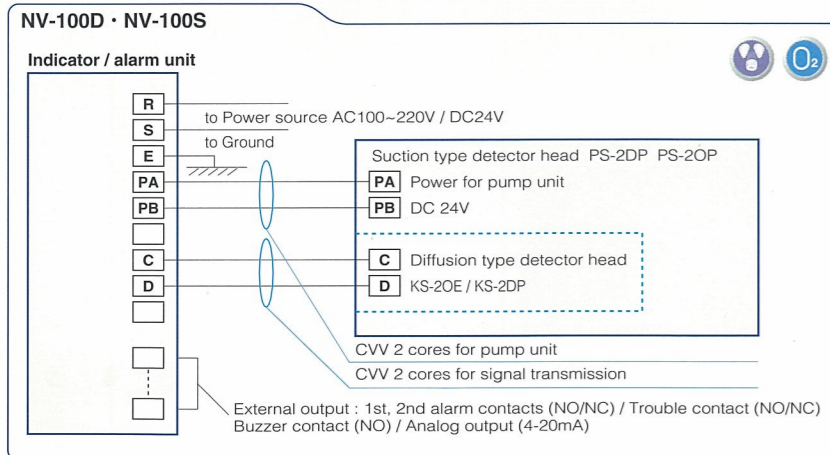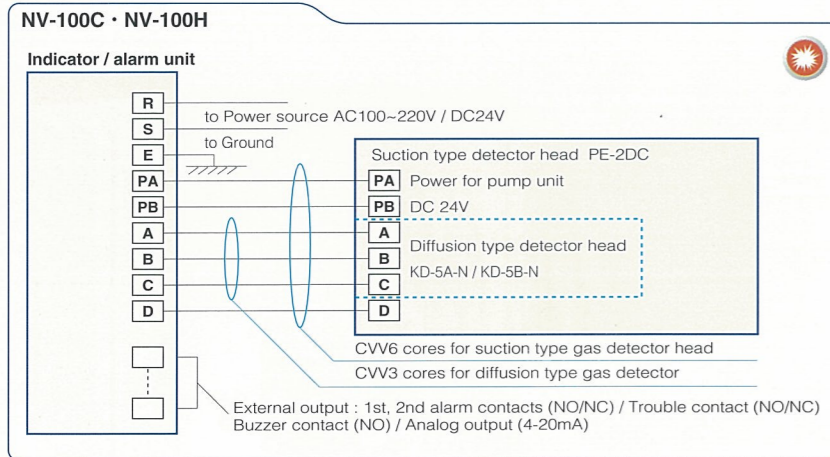
Over 40 years of experience in sensor manufacturing

Easy to read & operate multi-functional Indicator / alarm unit

The NV-100 series combine multi-factional Indicator / alarm units and state-of-art sensors into an easy to use, highly reliable gas detection systems.

Gas concentration indicating bar-graph meter

This LCD bar-graph meter with backlight indicates gas concentration and preset alarm points. Peak value continues to blink even after reading value goes down after alarm.

Power lamp

It is green during normal operation and orange when sensor failure. It blinks green when equipment is turned on and also after failure has been taken care to show that equipment is warming up.

Alarm lamp (2 stage type)

Red lamp blinks to indicate gas leakages and it lights up when buzzer stops.

Reset key

When this key is pressed after buzzer stops and reading lowers, alarm lamp and peak hold go off. They do not go off when key is pressed before buzzer stops.

Buzzer stop key

When this key is pressed, alarm sound stops and alarm lamp lights up.

Backup lamp

It is off in normal state and it blinks red during power failure (Equipment with optional backup power source only)

2nd stage alarm preset value

Alarm value set key

Use these keys to change the preset alarm value. Press △ to increase set value and press ▽ to decrease it.

1st stage alarm preset value

Message window

Displays messages during operation of functions

■ Wiring

NV-100C・NV-100H

Indicator / alarm unit

R	to Power source AC100~220V / DC24V
S	
E	to Ground
PA	Suction type detector head PE-2DC / PA Power for pump unit
PB	PB DC 24V
A	A Diffusion type detector head
B	B KD-5A-N / KD-5B-N
C	C
D	D

CVV6 cores for suction type gas detector head
CVV3 cores for diffusion type gas detector

External output : 1st, 2nd alarm contacts (NO/NC) / Trouble contact (NO/NC)
Buzzer contact (NO) / Analog output (4-20mA)

NV-100D・NV-100S

Indicator / alarm unit

R	to Power source AC100~220V / DC24V
S	
E	to Ground
PA	Suction type detector head PS-2DP PS-2OP / PA Power for pump unit
PB	PB DC 24V
C	C Diffusion type detector head
D	D KS-2OE / KS-2DP

CVV 2 cores for pump unit
CVV 2 cores for signal transmission

External output : 1st, 2nd alarm contacts (NO/NC) / Trouble contact (NO/NC)
Buzzer contact (NO) / Analog output (4-20mA)

Indicator / Alarm unit

When gas concentration around the gas detector head becomes high and reading of the gas concentration indicating bar-graph exceeds the first preset alarm value, the first alarm lamp blinks and alarm sound (four short beeps) is heard. When the reading exceeds the second preset alarm value, the second alarm lamp blinks. At the same time, the peak hold value blinks on the LCD bar-graph metar.

■ System Configuration

Indicator / alarm unit	Gas detector head		Type	Detection principle	Explosion proof	Cable	Gases to be detected
For combustible gases = NV-100C							
NV-100C	Diffusion type		KD-5A-N	Catalytic combustion type	d3aG4	CVV3 cores	Combustible
			KD-5B-N		d2G4		
	Suction type type		PE-2DC	Catalytic combustion type	d2G4	CVV6 cores	Combustible
For combustible gases (Super sensitive type) = NV-100H							
NV-100H	Diffusion type		KD-5A-N	Hot-wire semiconductor type	d3aG4	CVV3 cores	Combustible
			KD-5B-N		d2G4		
	Suction type type		PE-2DC	Hot-wire semiconductor type	d2G4	CVV6 cores	Combustible
For toxic, semiconductor manufacturing gases = NV-100D							
NV-100D	Diffusion type		KS-2D	Controlled potential electrolysis type	i3nG5*	CVV2 cores	Toxic, semiconductor manufacturing gases
	Suction type type		PS-2DP	Controlled potential electrolysis type	N/A	for Pump CVV2 cores, for signal CVV2 cores	Toxic, semiconductor manufacturing gases
For Oxygen = NV-100S							
NV-100S	Diffusion type		KS-2O	Galvanic cell type	i3nG5*	CVV2 cores	Oxygen
	Suction type type		PS-2OP	Galvanic cell type	N/A	for Pump CVV2 cores, for signal CVV2 cores	Oxygen

*with zener barrier

COSMOS NV-100H

NV-100 C/H/D/S

Specification for indicator / alarm unit

Model	NV-100C	NV-100H	NV-100D	NV-100S
Detection principle	Catalytic combustion type	Hot-wire semiconductor type	Controlled potential electrolysis type	Galvanic cell type
Gases to be detected	Combustible gases (LPG, Methane, etc.)		Toxic gases, Semiconductor manufacturing gases	Oxygen (for deficiency, for leakage)
Measuring range	0～100%LEL	As per specification	As per specification	For deficiency : 0～25%vol For leakage : 0～50%vol
Indicator unit	LCD bar-graph meter with backlight			
Alarm accuracy	Within ±25% of the preset alarm value		Within ±30% of the preset alarm value	Within ±1%vol of the preset alarm value
Operating temperature	0 to 40℃			
Power source	AC100-240V 50/60Hz (standard) / DC24V (Option.)			
Power consumption	Diffusion type: 12VA / 17VA (with a backup power source) / Suction type: 4VA per unit to be add.			
Alarm indication	First alarm: First Alarm lamp blinks red and a buzzer is heard. Second alarm: First and second Alarm lamps blink red and a buzzer is heard.			
Trouble indication	Power lamp rights up orange and the content of the failure is indicated.			
External output	External alarm output - 1st alarm : No voltage 1c contact, 2nd alarm : No voltage 1c contact, Trouble alarm : No voltage 1c contact, Buzzer : No voltage 1a contact (Contact capacity : AC100V 2A load resistance) Analog output : 0～20mA			
External dimensions	Without backup power source : W113 x H204 x D71.5mm approx. 1.5kg With backup power source : W113 x H234 x D110mm approx. 3.0kg			

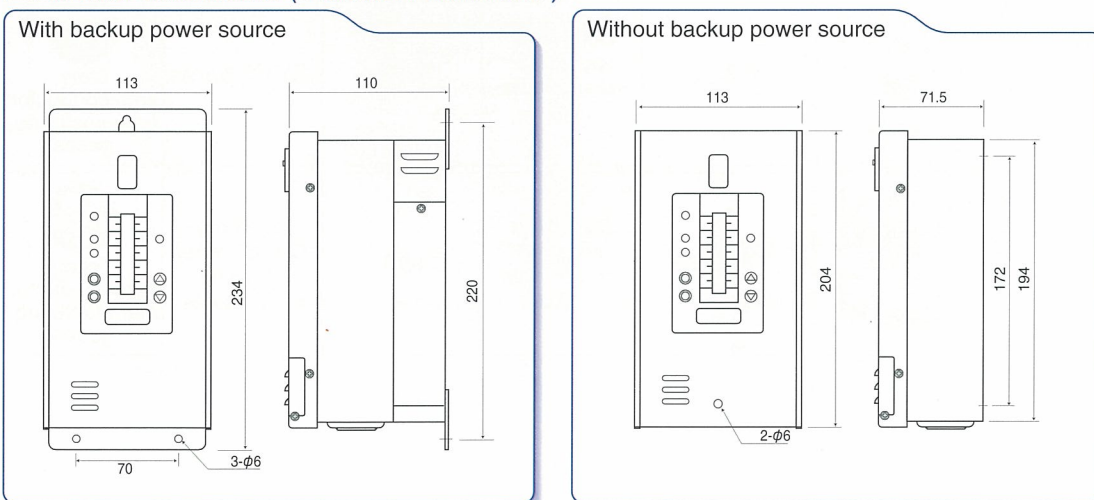## Specifications for Gas Detector Head for Combustible Gases

Model	KD-5A-N	KD-5B-N	PE-2DC
Sampling method	Diffusion type		Suction type
Explosion proof construction	d3aG4	d2G4	
Operating temperature	-10℃～60℃		-10℃～40℃
Applicable conduit	G22		
Cable entry	Pressure tight packing type		
Max. cable length	Less than 600m when used 1.25mm2 cable (Resistance less than 10Ω)		
Weight	approx. 1.2kg	approx. 1.0kg	approx. 6.2kg

Specifications for Gas Detector Head for Toxic Gases, Oxygen

Model	KS-2D	PS-2DP	KS-2O	PS-2OP
Sampling method	Diffusion type	Suction type	Diffusion type	Suction type
Explosion proof construction	Intrinsically safe construction with zener barrier (Option)			
Operating temperature	0℃～40℃ (30%～80%RH)			
Applicable conduit	G16			
Cable entry	Box connector type			
Max. cable length	Less than 600m when used 1.25mm2 cable (Resistance less than 10Ω)			
Weight	approx. 1.5kg	approx. 5.0kg	approx. 1.0kg	approx. 5.0kg

■ External dimenstions (Indicator / alarm unit)

With backup power source

113   110   234   220   70   3-φ6

Without backup power source

113   71.5   204   172   194   2-φ6

CAUTION	⚠	· Please read the instruction manual before using to ensure safe operation · Be sure to use only the power source and voltage indicated.

NEW COSMOS ELECTRIC CO., LTD.