

RIKEN

FOR CONTINUOUS MONITORING
MULTI-CHANNEL GAS MONITORING SYSTEM
RM-590 series



Indicator/alarm unit

Buzzer unit

■ Typical applications

- Petro-refinery, petrochemical plants
- Chemical plants
- Semi-conductor manufacturing plants
- Engineering public works
- Power station, gas utilities
- Iron and steel works



95QR · 007



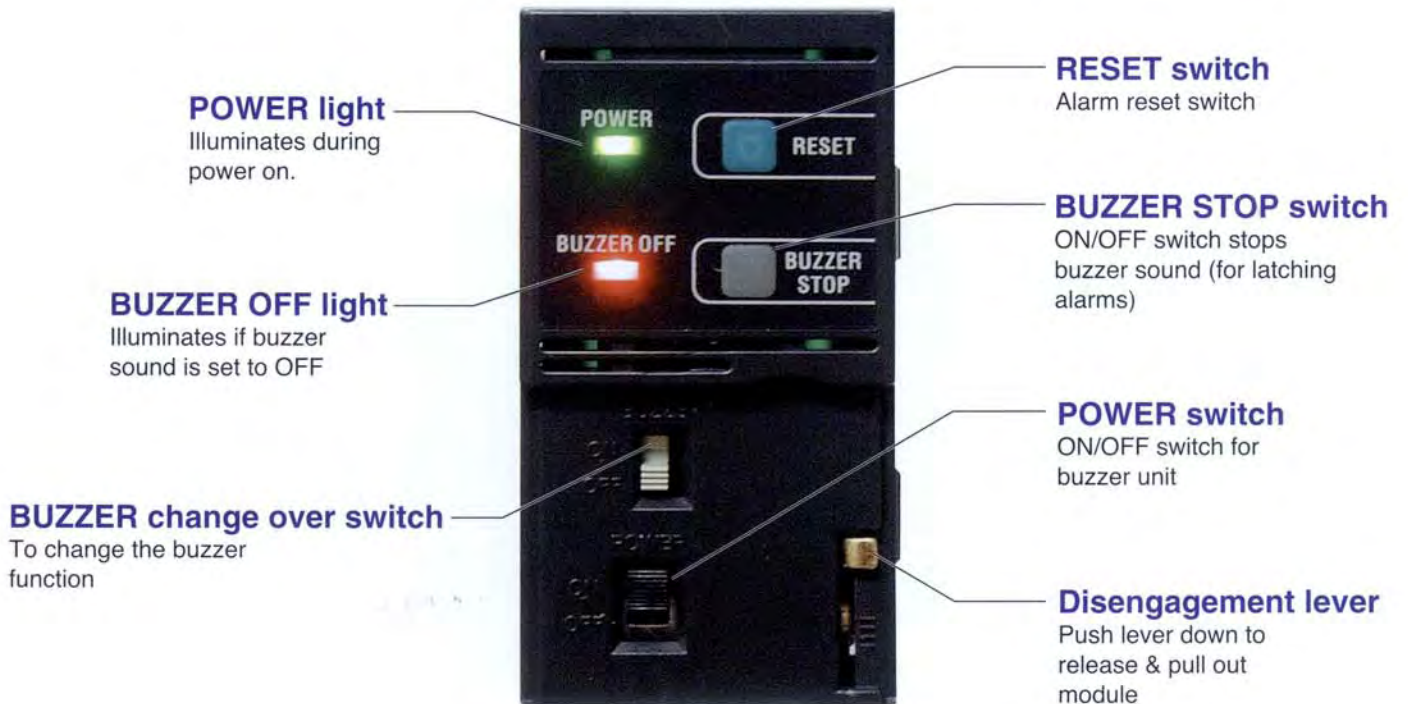
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**RIKEN KEIKI**

Features

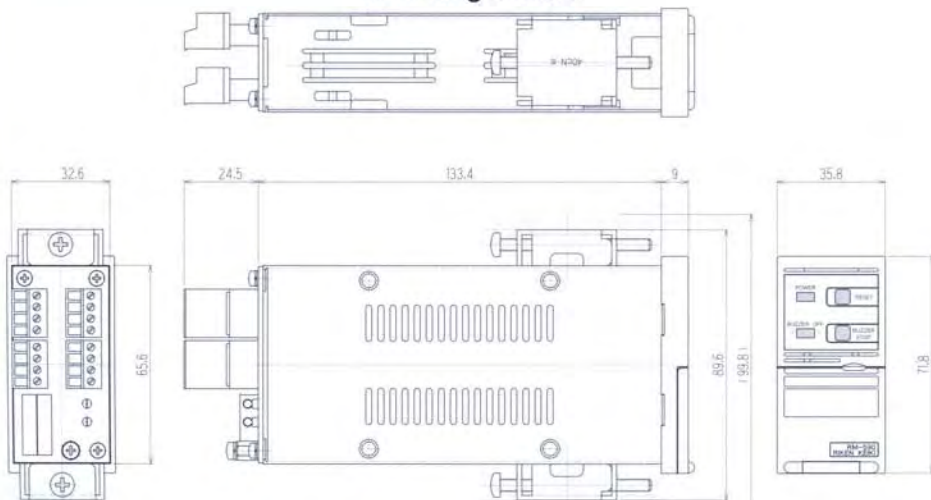
- 4 digits digital LED display for gas concentration
- 2 alarm levels with relays
- User selectable alarm functions (latching, self reset), and alarm test functions
- Integrated compact design with easy plug-in type module
- Zero suppression function (Maintenance mode function)
- Accepts flow failure alarm
- Provides 4-20mA output
- Wide variety of detectable gases and detector heads
- LONWORKS network available as option

Buzzer unit



Buzzer unit TAN-590

with single case



(Unit : mm)

Model	Detection principle	Gases detected
GP-591	Catalytic combustion	Combustible gases
NC-591	New ceramic	Combustible gases
NC-591W	New ceramic	Combustible gases
GH-591/591H	Semiconductor	Combustible/toxic gases
SP-591	Catalytic/semiconductor combination	Combustible/toxic gases
EC-592	Electrochemical cell	Toxic gases
OX-591	Galvanic cell	Oxygen
OX-592	Galvanic cell	Oxygen, 4-20mA input
RM-592/593	For input from others (2-wire/3-wire signals)	4-20mA input/1-5V input

Indicator/alarm unit

Gas concentration display

Displays gas concentration on 4-digit digital indicator

POW/TR light

Illuminates during normal operation, flashes for trouble

MODE switch

Maintenance mode switch

POWER switch

ON/OFF switch for indicator/alarm unit

PC connection port

To change internal settings with remote PC



ALARM light

Flashes for 2nd alarm, illuminates after reset

WARNING light

Flashes for 1st alarm, illuminates after reset

TEST/SET switch

To test alarm functions

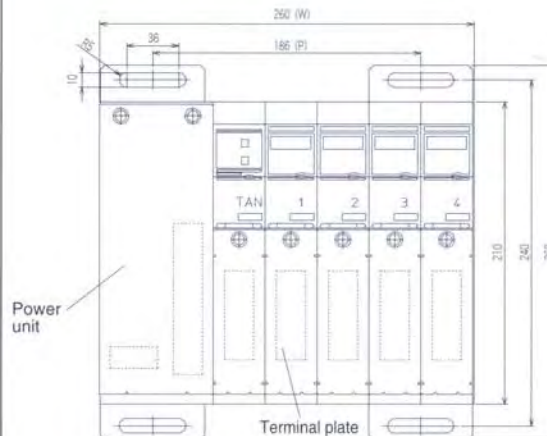
AL2/▼switch

To confirm 2nd alarm level

AL1/▲switch

To confirm 1st alarm level

Multi-unit case



Indicator/
alarm
unit

Mounting
bracket 2t

Channel	1	2	3	4	5	6	7	8	9	10	11	12
W	152	188	224	260	296	332	368	404	440	476	512	548
P	78	114	150	186	222	258	294	330	366	402	438	474

(Unit : mm)

BASIC SYSTEM OUTLINE — RM-590 SERIES

COMBUSTIBLE GASES

TOXIC GASES

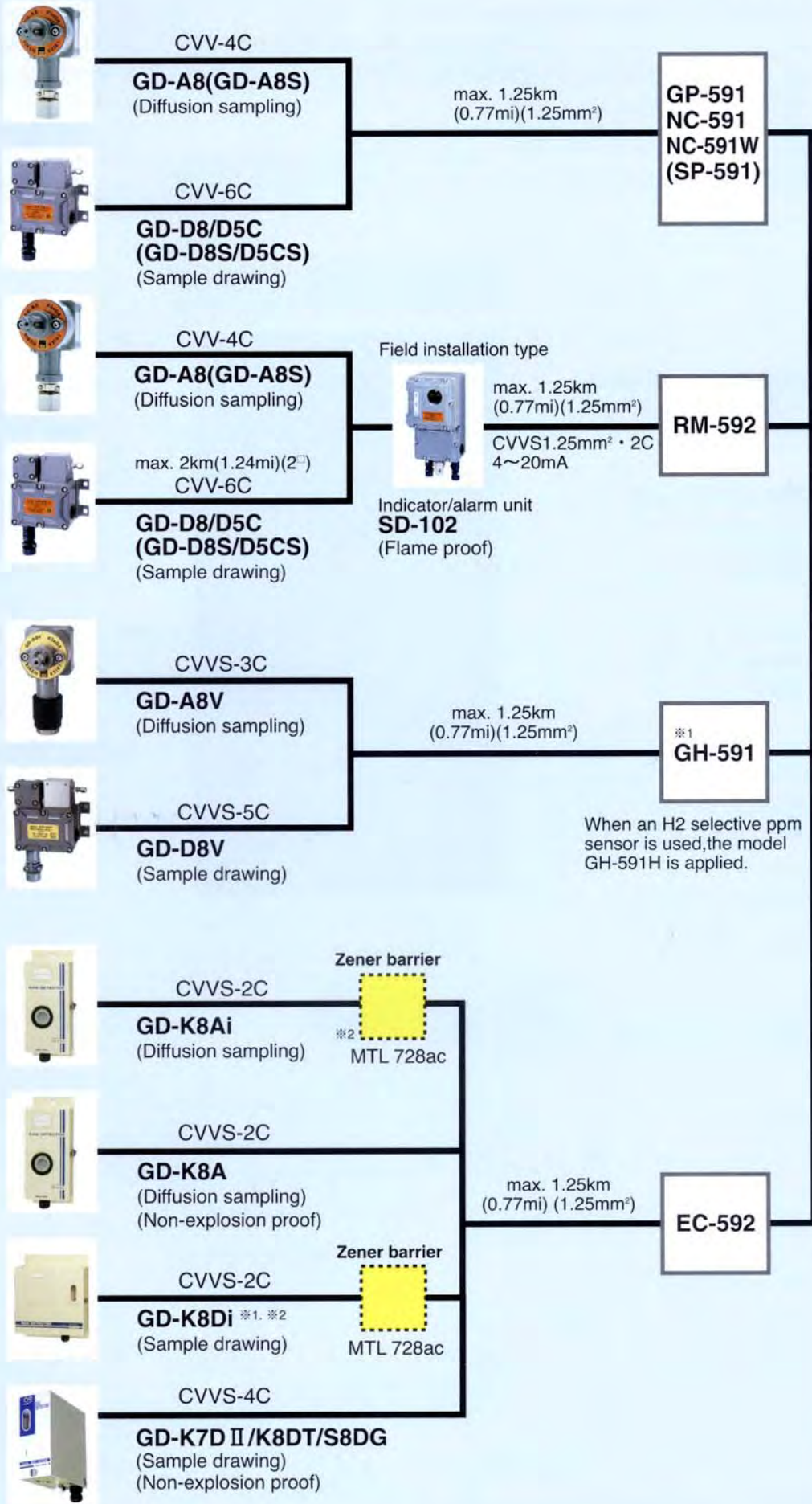
Catalytic combustion method - New ceramic method (Direct transmission)

Semi-conductor method (Direct transmission)

Electrochemical method (4 ~ 20mA transmission)

Detector

Indicator/alarm unit



IES FOR MULTIPURPOSE GAS DETECTION

Indicator/alarm unit RM-590 series w/single case 590-SR

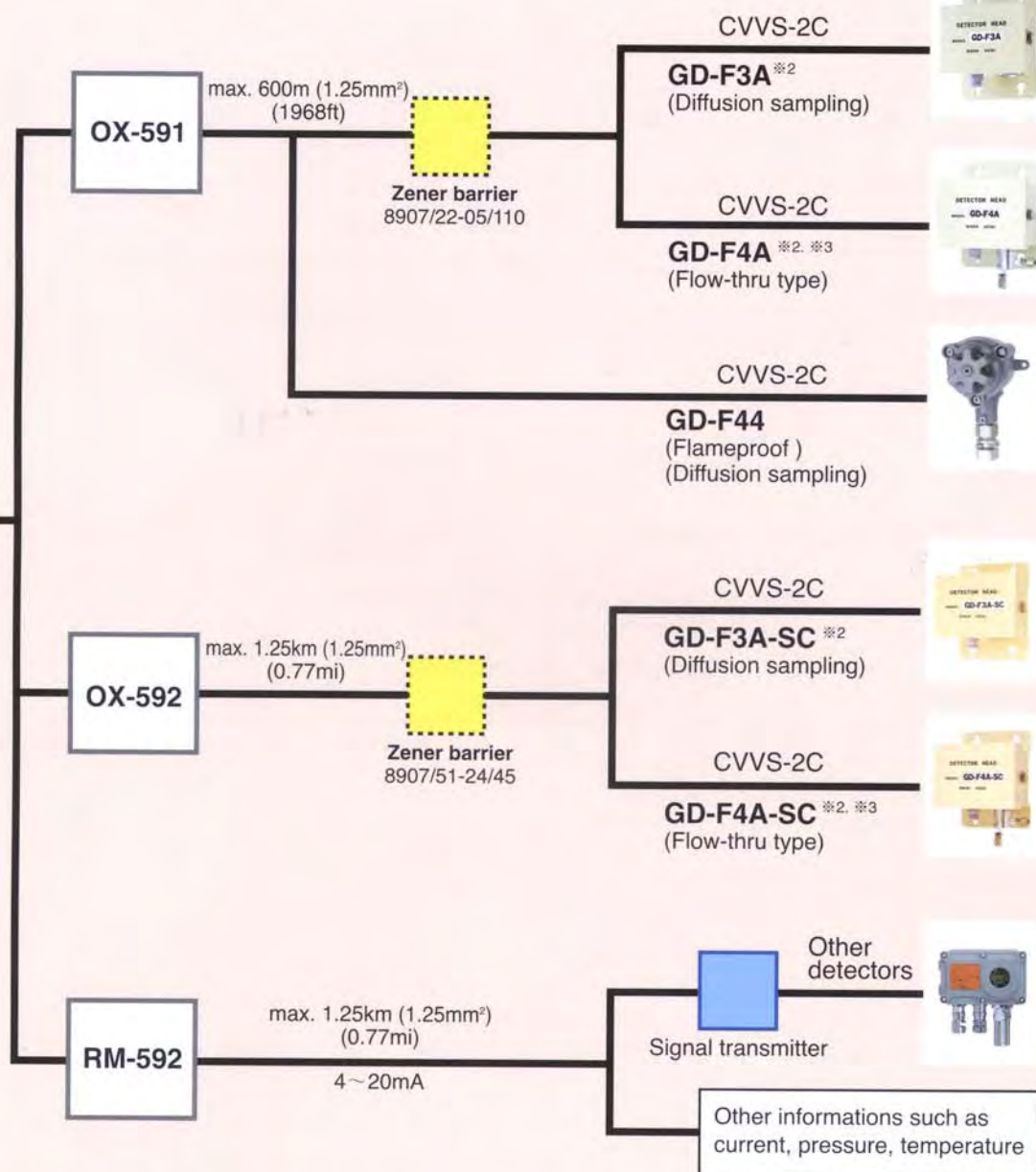
Buzzer unit TAN-590 w/single case 590-SR

Multi-unit case



Indicator/alarm unit

Detector



Galvanic cell method(direct transmission)

Galvanic cell method (4~20mA transmission)

OXYGEN

※ 1. When the GD-K8Di is used in hazardous areas, they require a separate flame proof pump.

※ 2. Intrinsically safe by use of exclusive zener barrier.

※ 3. When GD-F4A/F4A-SC are used in hazardous areas, they require a separate flame proof pump.

☐ Intrinsically safe design specification shall require a special zener barrier between indicator/alarm unit and a detector head.

Specifications

SPECIFICATIONS FOR INDICATOR/ALARM UNIT

Model *5	GP-591	NC-591	NC-591W*4	GH-591/H	SP-591	EC-592	OX-591	OX-592	RM-592 RM-593	Buzzer Unit TAN-590
Detection principle	Catalytic combustion	New ceramic		Semiconductor	Catalytic/semiconductor combination	Electrochemical	Galvanic cell		General measuring signal	—
Gas detected	Combustible gases			Combustible/toxic gases	Toxic gases	Oxygen		4-20mA outputs	—	
Detection range	0~100%LEL	0~several thousand ppm	Dual ranges CH ₄ : 0~5000ppm 0~100%LEL i-C ₄ H ₁₀ : 0~2000ppm 0~100%LEL	0~several hundred or thousand ppm	Depends on gas	0~5, 10, 25 or 50vol%		—	—	
Indication	4 digit digital LED (7 segments), Gas concentration indication									—
Initial clear*1	Provided (approx. 25 sec.)									—
Zero suppression	Built-in (To suppress zero fluctuation caused by change of atmosphere)									—
Operating temperature & humidity	0~40°C (0~104°), 10~90%RH									—
Power supply	Single	DC24V ±10%								
	Multi	AC100/110/115V or AC200/220/240V								
Power consumption	10W (DC) 17VA (AC)*3			10W (DC) 18VA (AC)*3		5W (DC) 10VA (AC)*3		5W (DC) 12VA (AC)*3		2W (DC) 3VA (AC)
Transmission distance	Max. 1.25km (0.77mi)					Max. 1.25km (0.77mi) by 2 shielded cable	Max. 600m (1968ft) by 2 shielded cable	Max. 1.25km (0.77mi) by 2 shielded cable		—
Alarm indication	1st alarm : Orange LED flashing, 2nd alarm : Red LED flashing,			Latched mode, Continuous light and non-latched mode after reset					Buzzer*2	
Alarm contact	1a or 1b (Both 1st and 2nd alarm), latched mode, Non-latched mode after reset									1a or 1b Latched mode
Output signal	4-20mA DC		In ppm range : 4-16mA DC In %LEL range: 16-20mA DC	4-20mA DC						—
Alarm delay circuit	0-60 sec., adjustable in 1 second increments									—
Transmission method	Sensor output direct transmission					4-20mA transmission	Sensor output direct transmission	4-20mA transmission		—
Trouble alarm	Green LED Flashing, Non-latched (except OX-591) 1a or 1b, non-latched (except OX-591)									1a or 1b Non-Latched mode
Case type	Multi-unit case : Munsell 2.5Y 9/2									—
	Single case : Black									—

★ Specifications subject to change without notice.

*1 Initial clear: Time delay to prevent false alarm when powered on.

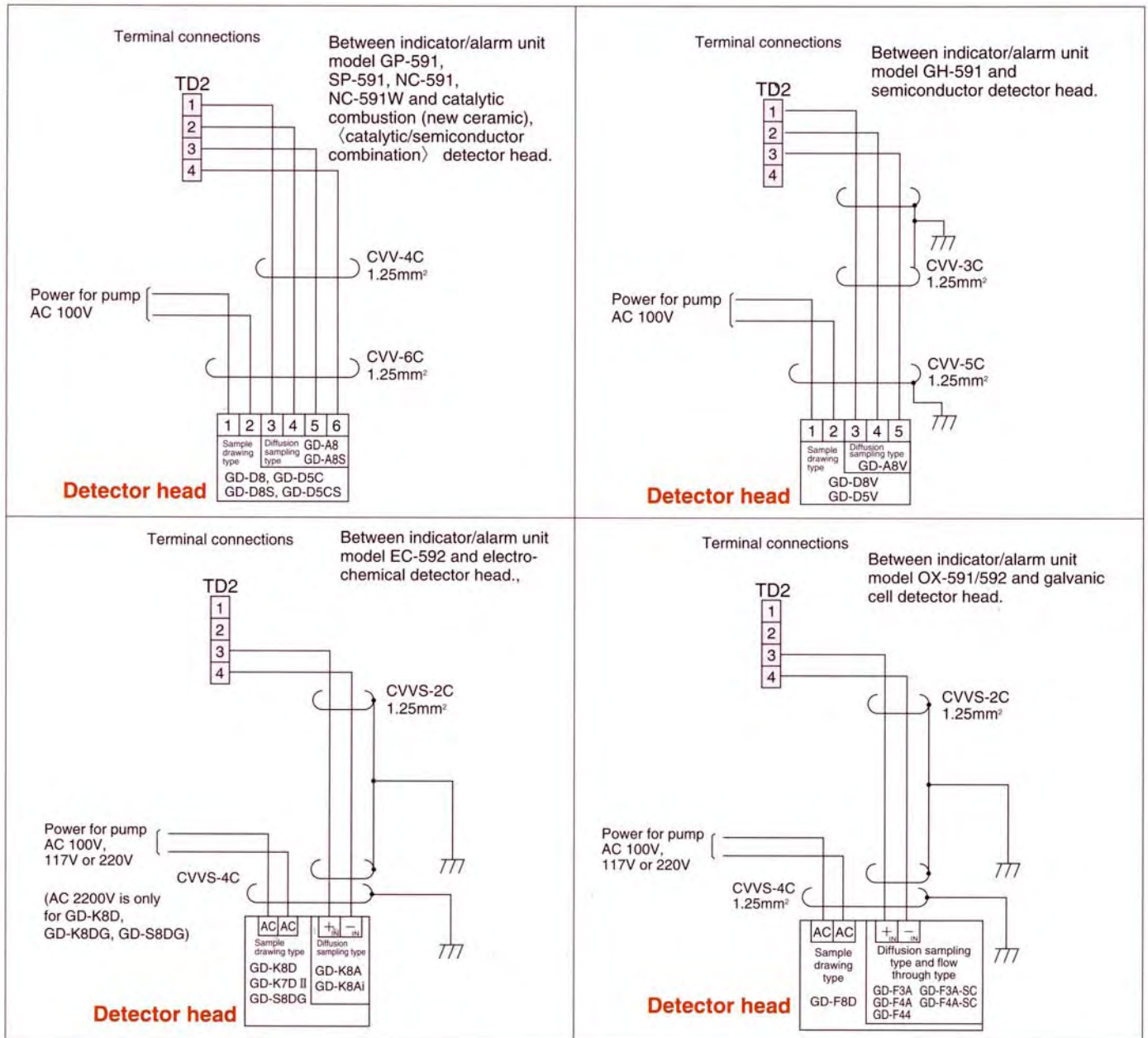
*2 Total alarm for gas and trouble, silenced with reset switch.

*3 Add 18VA (AC) in case of multi-unit case.

*4 Alarm setting for NC-591W is one point only in ppm range and one point only in %LEL range.

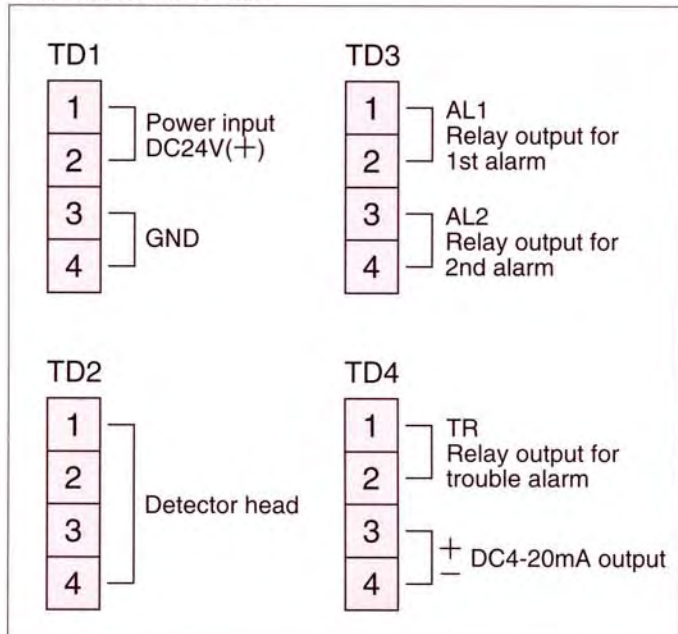
*5 Model designation becomes □□-593 when 3-wire detectors are connected.

Wiring Connection

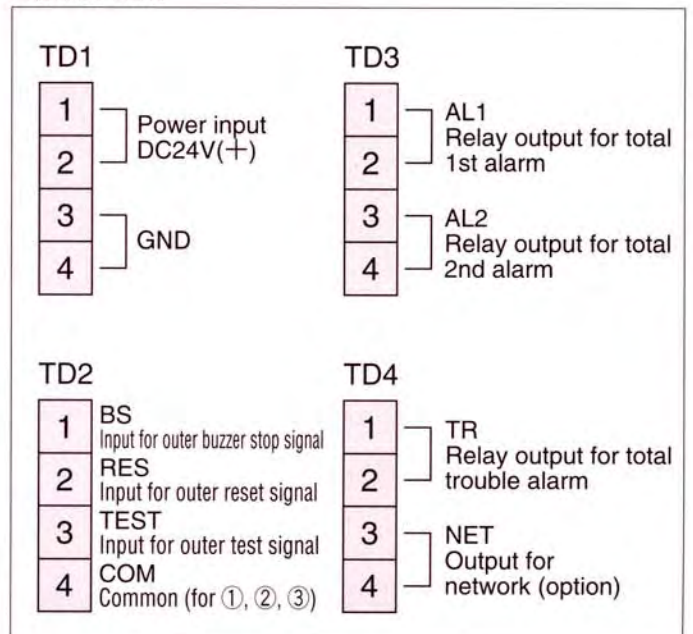


Terminal Arrangement

Indicator/alarm unit



Buzzer unit



APPLICABLE DETECTOR HEADS (TYPICAL)

	GP-591 NC-591 NC-591W SP-591	GH-591/H	EC-592	OX-592	OX-591	RM-592 RM-593
Intrinsically safe or flame proof design. Diffusion sampling	GD-A8 GD-A8-18 GD-A8S	GD-A8V GD-A8V-38	GD-K8Ai with zener barrier	GD-F3A-SC with zener barrier	GD-F3A with zener barrier GD-F44	SD-705RI
Intrinsically safe or flame proof design. Sample drawing	GD-D8/D8S GD-D8AS/D8SAS GD-D5C/D5CS GD-A8AS/D8SAS	GD-D8V GD-D8VAS GD-D5V/D5W GD-A8VAS	GD-K8Di with separate flame proof pump and zener barrier	GD-F4A-SC with separate flame proof pump and zener barrier	GD-F4A with separate flame proof pump and zener barrier	SD-705RID
Non-explosion proof. Diffusion sampling	—	—	GD-K8A	GD-F3A-SC	GD-F3A	RI-215A
Non-explosion proof. Sample drawing	GD-B2	GD-B2V GD-V7D	GD-K7DII GD-S8DG	GD-F4A-SC with separate pump	GD-F4A with separate pump GD-F8D	GD-77 series RI-257



A9812



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