

RIKEN

MULTI-CHANNEL GAS MONITORING SYSTEM

COMBUSTIBLE

OXYGEN

TOXIC GAS

RM-590 SERIES



Indicator/alarm unit

Buzzer unit

Typical applications

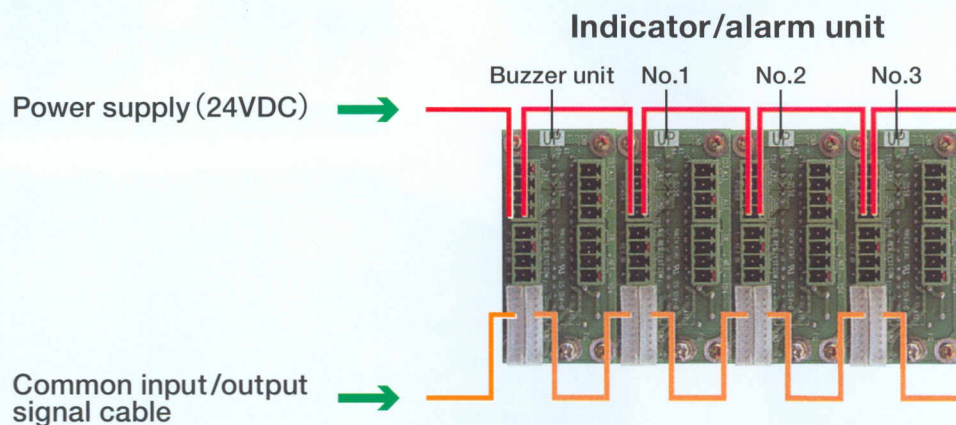
- Petro-refinery, petrochemical plants
- Chemical plants
- Semi-conductor manufacturing plants
- Engineering, public works
- Power station, gas utilities
- Iron and steel works



RIKEN KEIKI

▣ Features

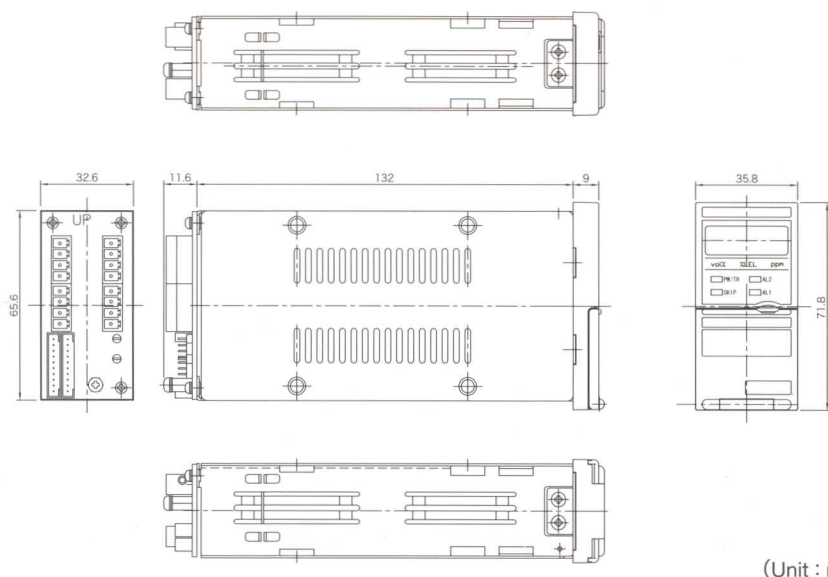
- 4 digits digital LED display for gas concentration
- 2 alarm levels with relays
- User selectable alarm functions (latching, non-latching, locking) and alarm test functions
- Integrated compact design with easy plug-in type module
- Zero suppression function (Maintenance mode function)
- Accepts flow failure alarm
- Provides alarm trend memory
- Wide variety of detectable gases and detector heads
- LONWORKS network available as option
- Applies wrong insertion preventive pin and one-touch wiring (easy for cross-wiring) for single case.



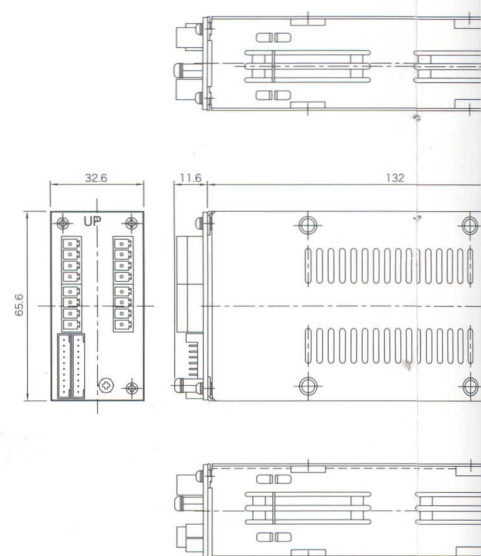
- Multi-unit case applies coupling unit enable to house upto 12 indicator/alarm units.



Indicator/alarm unit with single case 590-SRI



Buzzer unit TAN-590 with single



Gas concentration display

Displays gas concentration on 4-digit digital indicator

POWER/TROUBLE light

Turns on 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

Indicator/alarm unit (GP-591)



ALARM light

Flashes for 2nd alarm, turns on after reset

WARNING light

Flashes for 1st alarm, turns on after reset

TEST/SET switch

To test alarm functions

AL2/▼ switch

To confirm 2nd alarm level

AL1/▲ switch

To confirm 1st alarm level

POWER light

Turns on during power on

BUZZER OFF light

Turns on if buzzer sound is set to OFF

BUZZER change over switch

To change the buzzer function

Buzzer unit (TAN-590L)



RESET switch

Alarm reset switch

BUZZER STOP switch

To stop buzzer sound (used only for locking version)

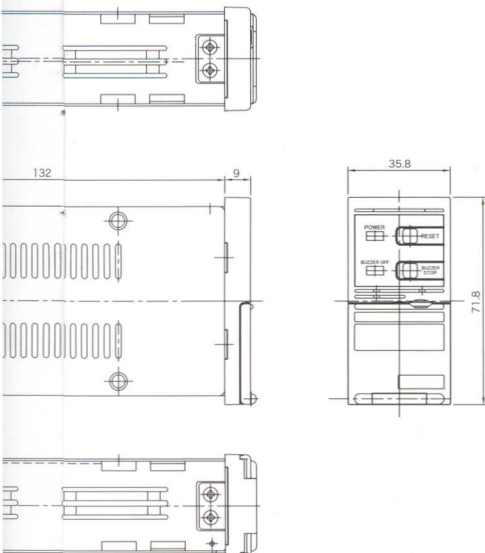
POWER switch

ON/OFF switch for buzzer unit

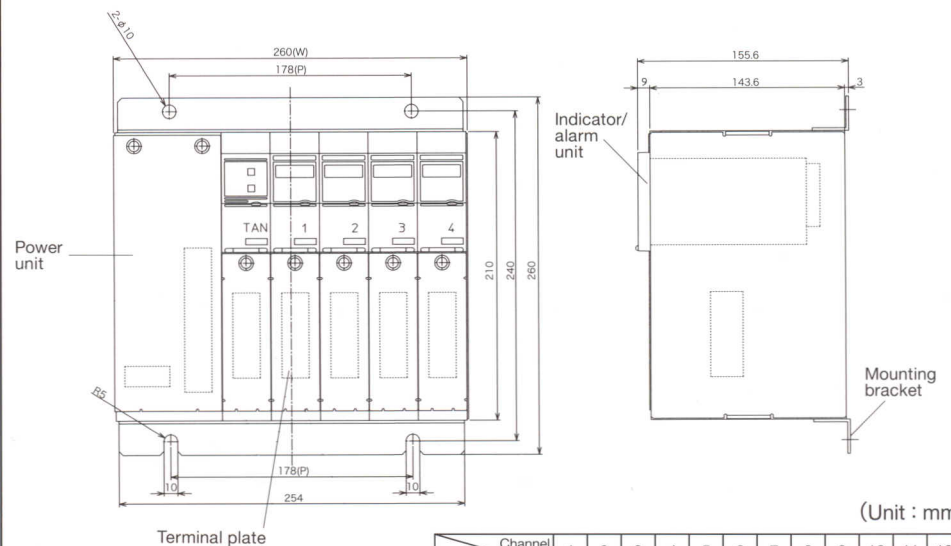
Disengagement lever

Push lever down to release & pull out module

with single case 590-SRT



Multi-unit case –Wall mounting type–



Channel	1	2	3	4	5	6	7	8	9	10	11	12
W	—	188	224	260	296	332	368	404	440	476	512	548
P	—	106	142	178	214	250	286	322	358	394	430	466

BASIC SYSTEM OUTLINE—RM-590 SERIES

Detector

Indicator/alarm unit

COMBUSTIBLE GASES

Catalytic combustion method
New ceramic method
(Direct transmission)

Semi-conductor method
(Direct transmission)

TOXIC GASES

Electrochemical method (4-20mA transmission)



CVV-4C

GD-A8
(Diffusion sampling)



CVV-6C

GD-D8
(Sample drawing)



CVVS-3C

GD-A8V
(Diffusion sampling)



CVV-5C

GD-D8V
(Sample drawing)



CVWS-2C

GD-K8Ai
(Diffusion sampling)



CVWS-2C

GD-K8A
(Diffusion sampling)
(Non-explosion proof)



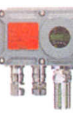
CVWS-2C

GD-K8Di ※1. ※2
(Sample drawing)



CVVS-4C

GD-K7DI/K8DG/S8DG
(Sample drawing)
(Non-explosion proof)



CVVS-3C

**Transmitter type
gas detector**



CVV-4C

**GD-K71D/V77D/F77D
series**

max. 1.25km
(0.77mi)(1.25mm²)

GP-591
NC-591
NC-591W

max. 1.25km
(0.77mi)(1.25mm²)

※1
GH-591

When an H₂ selective ppm
sensor is used, the model
GH-591H is applied.

Zener barrier



※2
MTL 728ac

Zener barrier



MTL 728ac

max. 1.25km
(0.77mi)(1.25mm²)

EC-592

max. 1.25km
(0.77mi)(1.25mm²)

4-20mA/DC24V

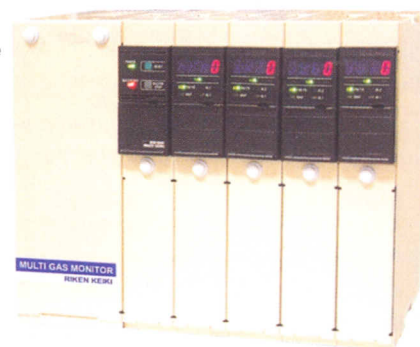
RM-593

RIES FOR MULTIPURPOSE GAS DETECTION

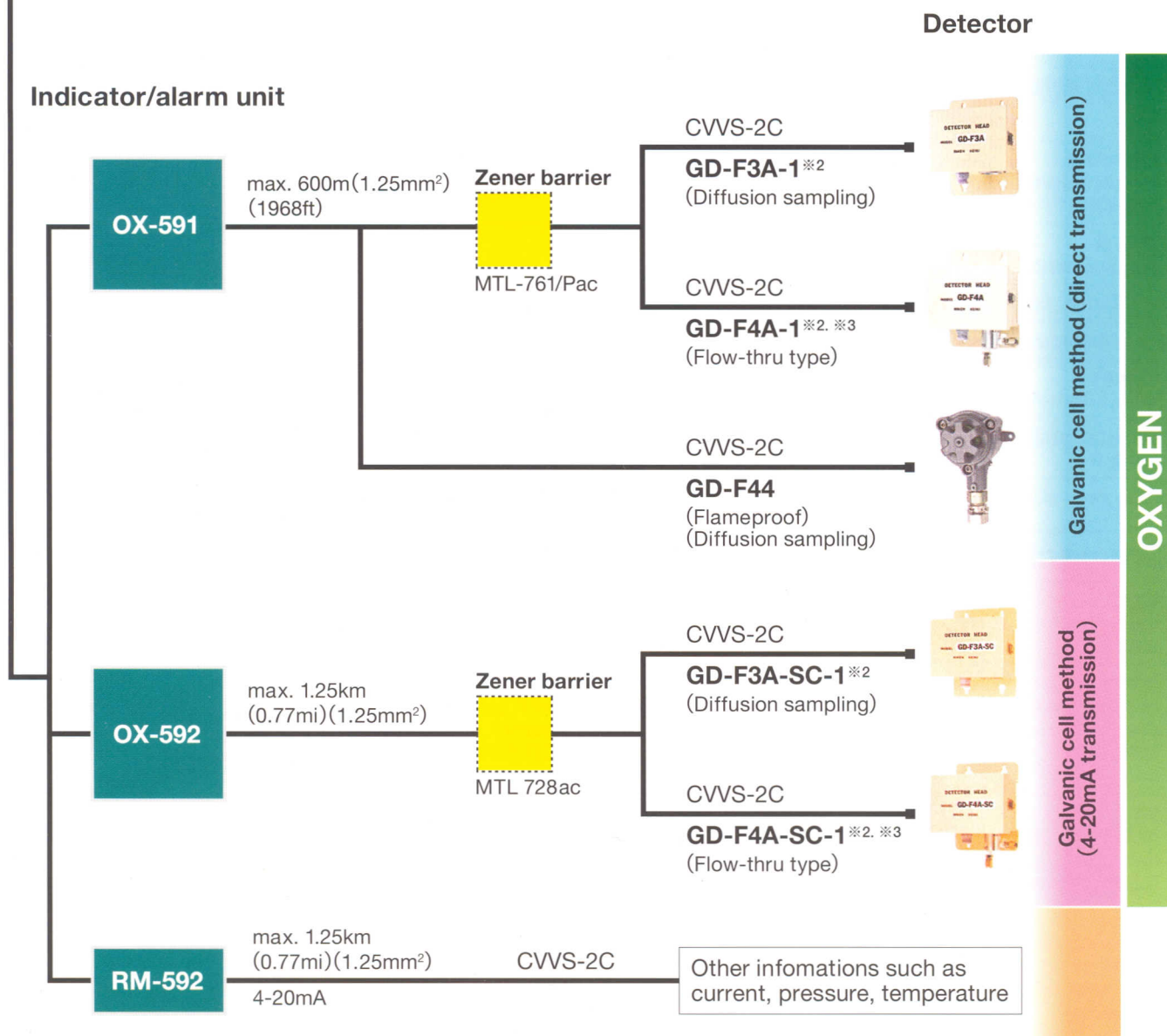
Indicator/alarm unit
RM-590 series
w/single case 590-SRI



Multi-unit case



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



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

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

※3. When GD-F4A-1/F4A-SC-1 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	GP-591 NC-591 NC-591W*	GH-591	EC-592	OX-591	OX-592	RM-592	RM-593
Target gas	Combustible gases	Combustible / Toxic gases	Toxic gases	Oxygen		General measuring signals	
Type of acceptable detector head	· Catalytic combustion · New ceramic	· Semiconductor	Electrochemical cell	Galvanic cell		4~20mA outputs	
						2-wire type	3-wire type
Measuring range	· 0~100%LEL · 0~5000ppm*	· 0~several hundred or thousand ppm	Depends on gas	0~5, 0~10, 0~25 or 0~50vol%		Depends on connected unit	
Acceptable input signal	Direct sensor signal		4~20mADC output	Direct sensor signal	4~20mADC output		
Display	4-digit digital LED (7 segments), Gas concentration display						
Alarm indication	Flashing LEDs : Orange (AL1), Red (AL2), steady lighting after acknowledgement. Latching or non-latching, Locking mode						
Trouble alarm	Green LED flashing, Non-latching						
Alarm relays	Normally energized or de-energized, Normally-open or close contact, rated 0.5A at 100VAC / 1.5A at 30VDC (resistive)						
Self-diagnostic function	System trouble, connection trouble						
Output signal	4~20mADC, non-isolated sourcing, max loop load 300Ω					4~20mADC, non-isolated sink, max loop load 300Ω	
Operating temperature and humidity	0~40°C, 10~90%R.H. (non-condensing)						
Power requirement	24VDC±10%						
	Single case						
Multi case	100~115VAC or 200~240VAC						
Power consumption	Max 10W (including detector head)		Max 5W (including detector head)		Max 5W (indicator/alarm unit only)		
Dimensions & weight	Approx 36 (W)×72 (H)×134 (D)mm, approx 0.1kg						

* Dual range of 0~100%LEL/0~5000ppm CH₄

Specifications subject to change without notice.

Connectable detector heads

applicable indicator/ alarm unit	GP-591 NC-591 NC-591W*	GH-591	EC-592	OX-591	OX-592	RM-592	RM-593
Intrinsically safe or flame proof design. Diffusion sampling	GD-A8 GD-A8-AS	GD-A8V GD-A8V-AS	GD-K8Ai with zener barrier	GD-F3A-1 with zener barrier GD-F44	GD-F3A-SC-1 with zener barrier		SD-705series SD-805series
Intrinsically safe or flame proof design. Sample drawing	GD-D8 GD-D8AS GD-D8·DC GD-D8NC	GD-D8V GD-D8VAS	GD-K8Di with separate flame proof pump and zener barrier	GD-F4A-1 with separate flame proof pump and zener barrier	GD-F4A-SC-1 with separate flame proof pump and zener barrier		SD-705& SD-805series with separate flame proof pump
Non-explosion proof. Diffusion sampling			GD-K8A			RI-215A	GD-F77A
Non-explosion proof. Sample drawing			GD-K7DII GD-K8DG GD-S8DG		GD-F8D	RI-215D RI-257 FP-260AGZS	GD-K71D GD-77series

Specifications for Buzzer Unit

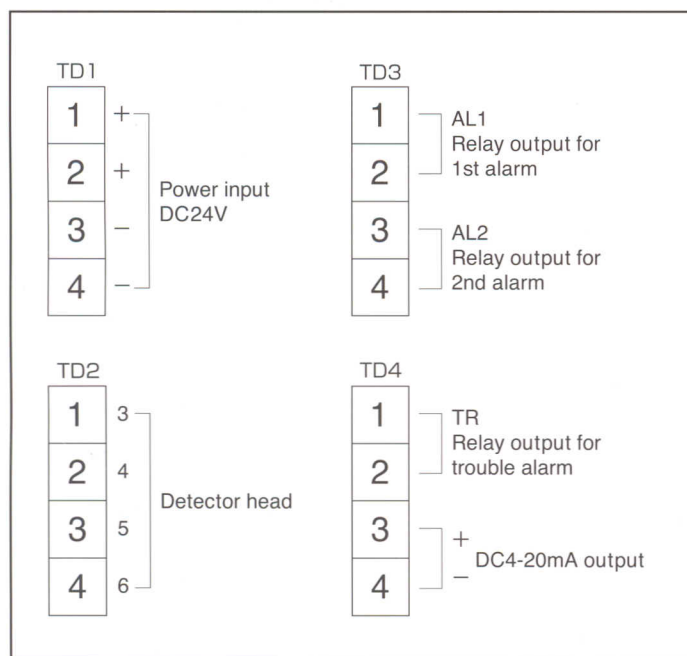
Model	TAN-590	TAN-590L
Common gas alarm	Buzzer sound, latching (released after resetting) or non-latching mode	Buzzer sound, locking mode (buzzer sound stops by BUZZER stop switch)
Common trouble alarm	Non-latching · buzzer sound (released after resetting)	Non-latching · buzzer sound (stops by BUZZER stop switch)
Alarm contact	Normally energized or de-energized, normally-open or normally-close contact, rated 0.5A at 100VAC/1.5V at 30VDC (Resistive)	
Operating temperature and humidity	0~40°C, 10~90%R.H. (non-condensing)	
Power requirement	24VDC±10%, 2W	
Dimensions & weight	Approx 36 (W)×72 (H)×134 (D)mm, 0.1kg	

Specifications subject to change without notice.

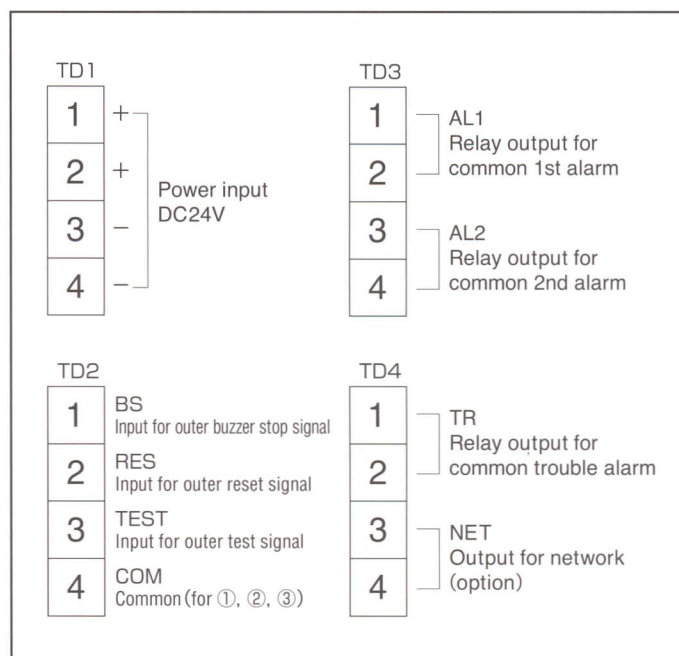
Wiring Connection

Terminal Block (single case)

590-SRI for Indicator/alarm unit

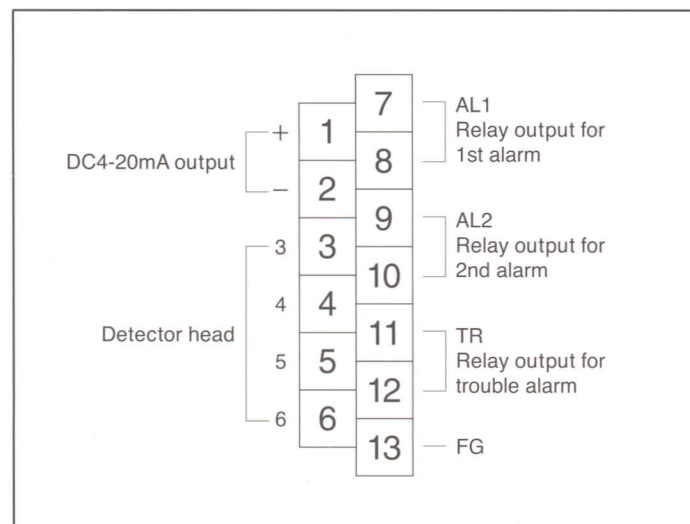


590-SRT for Buzzer unit

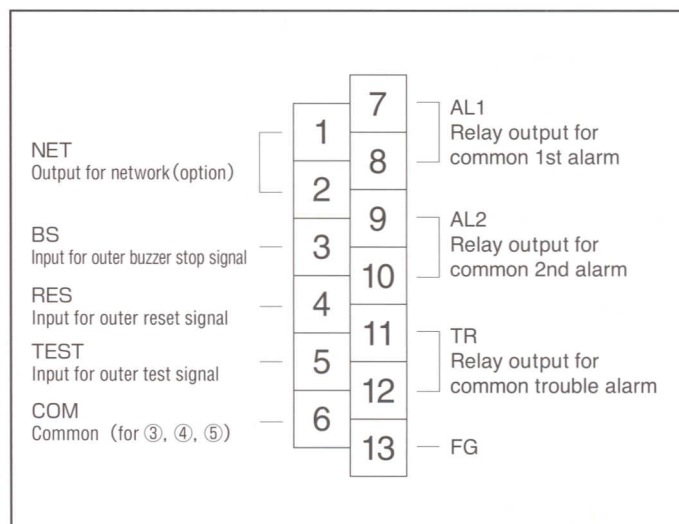


Terminal Block (Multi-unit case)

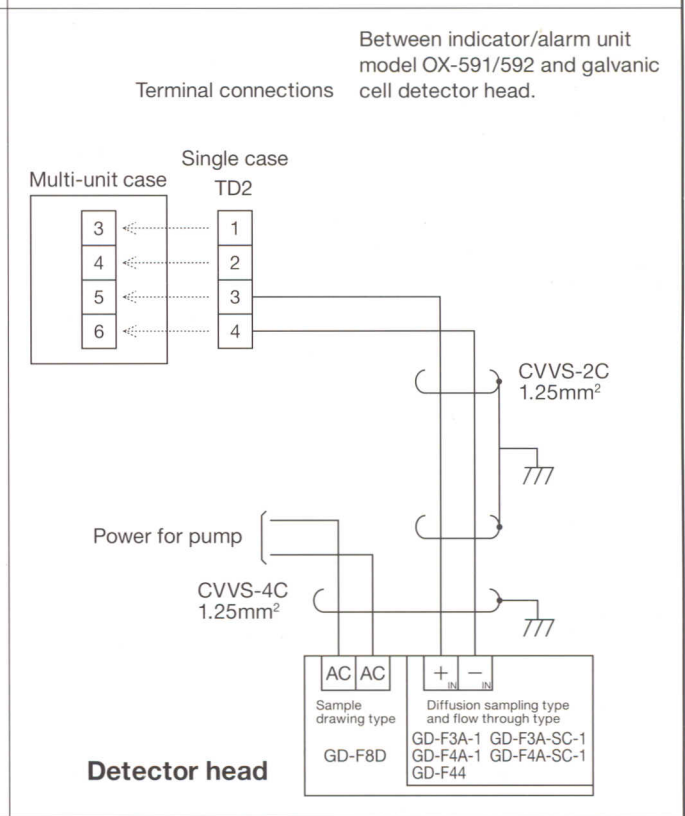
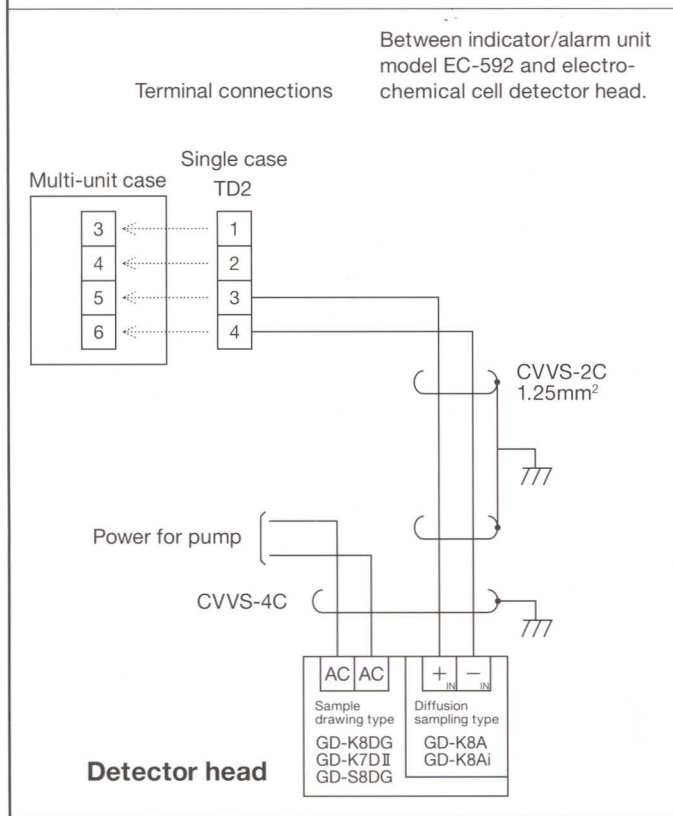
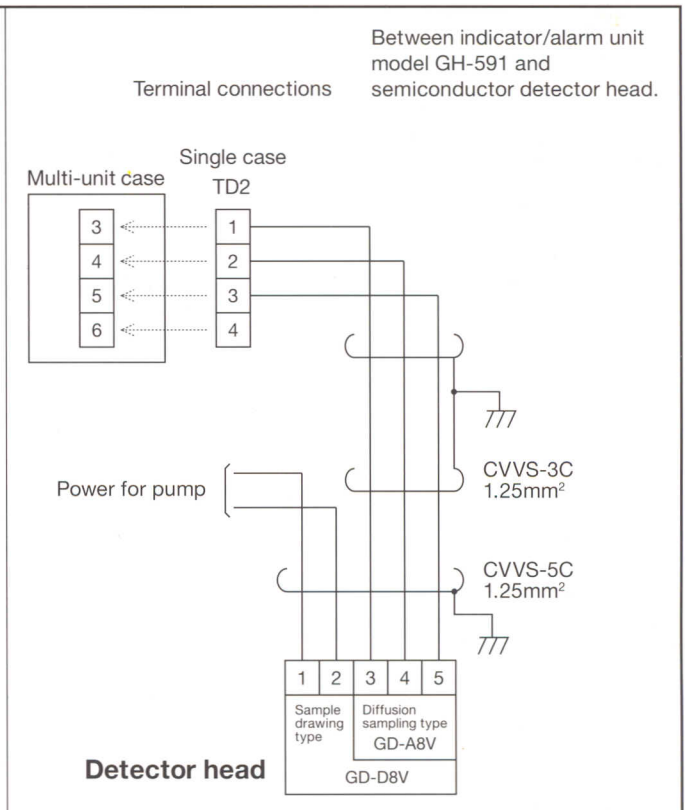
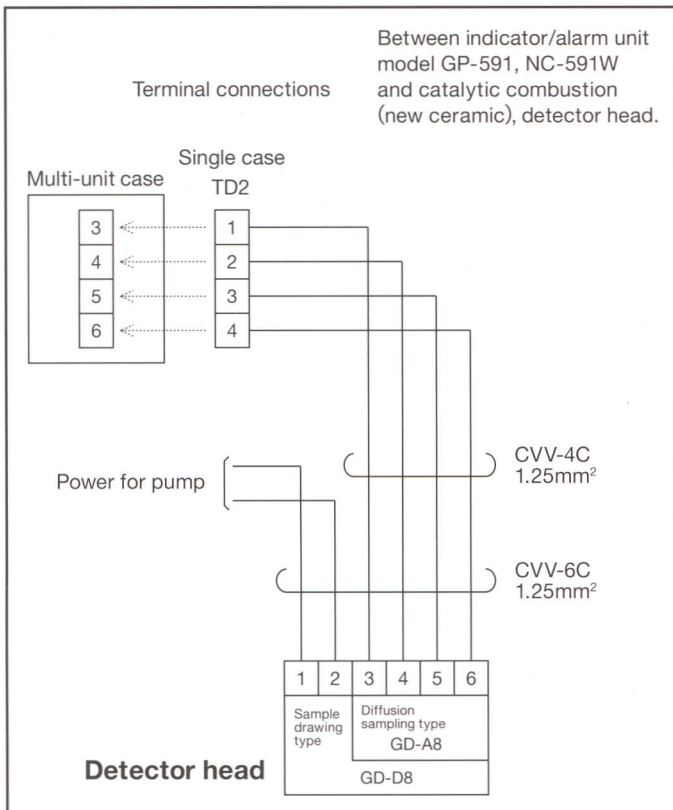
Indicator/alarm unit



Buzzer unit



Wiring Connection



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