

RIKEN**FOR SEMICONDUCTOR PROCESSING GASES****INTELLIGENT GAS DETECTOR****GD-71/GD-77 series**

Toxic Gases	GD-K71D	4-20mA analog transmission
	GD-K71D-NT	DC power line communication
	GD-K71D-DV	DeviceNet method
Combustible Gases & Hydrogen(H ₂)	GD-V77D	4-20mA analog transmission
	GD-V77D-NT	DC power line communication
	GD-V77D-DV	DeviceNet method
NF3	GD-K77DG	4-20mA analog transmission
	GD-K77DG-NT	DC power line communication
	GD-K77DG-DV	DeviceNet method
TEOS Organometallic Gases	GD-S77DG	4-20mA analog transmission
	GD-S77DG-NT	DC power line communication
	GD-S77DG-DV	DeviceNet method
Oxygen(O ₂)	GD-F77D(A)*	4-20mA analog transmission
	GD-F77D(A)-NT	DC power line communication
	GD-F77D-DV	DeviceNet method

*(A): Diffusion sampling type

- Compact smart detector
- Microprocessor operation



- Digital LED display
- Quick replacement - No tools required for maintenance

Global Standard Network (DeviceNet, LonWorks and CC-Link) available as options

Features

- Quick replacement of pump and sensor. (No tools required - GD-71 series)
- Digital display (LED) for gas concentration readout.
- High brightness LED assures clear reading even in dark places.
- Calibration and other sensor information stored in sensor memory.
- Trend graph for alarm evidence.
- Self-diagnostic functions by microprocessor.
- Two alarm levels, trouble alarm, plus relay outputs.
- Maintenance capability by remote PC.
- Automatic flow adjustment.



95QR-007

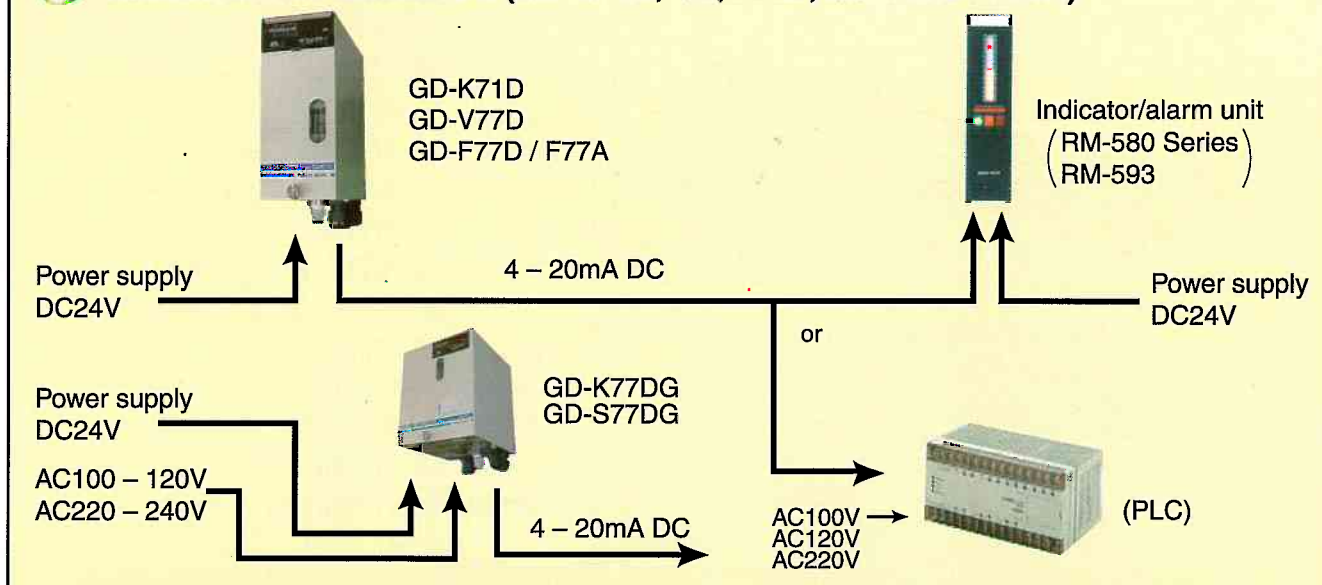


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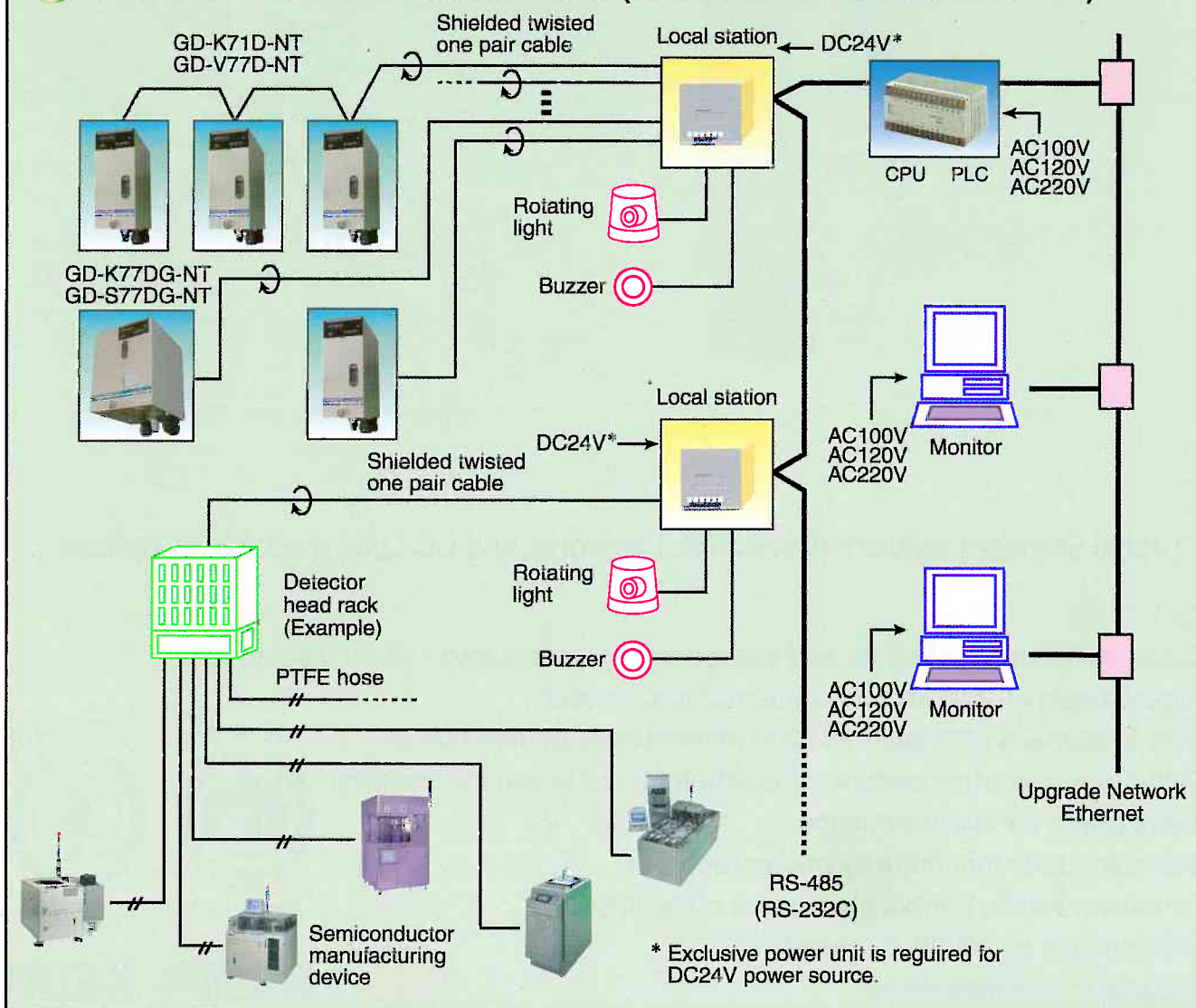
**RIKEN KEIKI**

SYSTEM CONFIGURATION

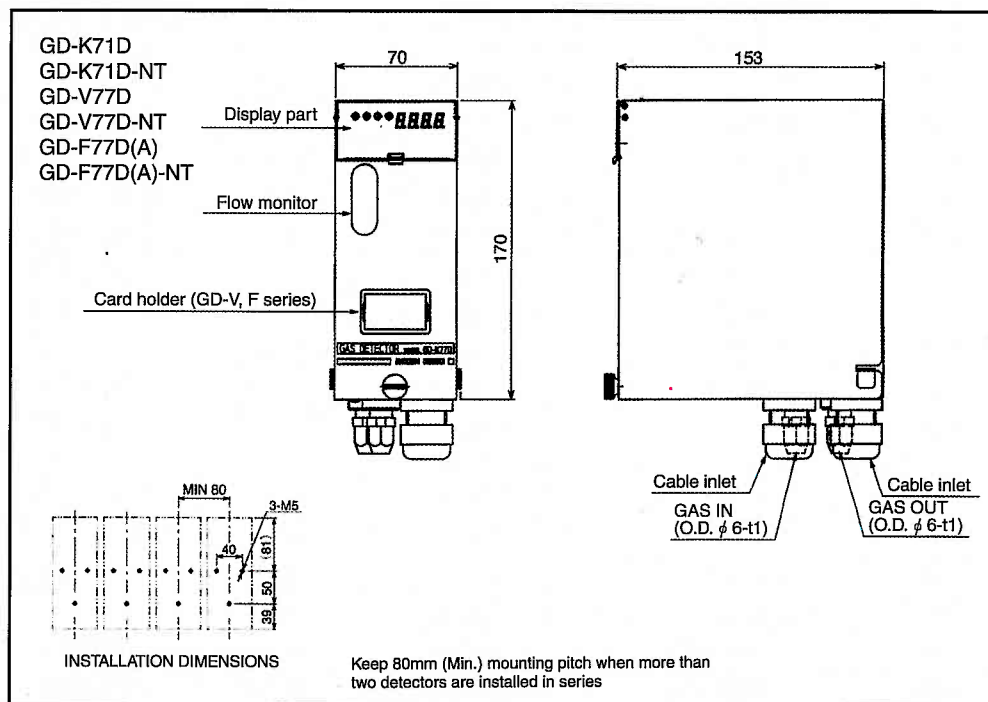
1 ANALOG TRANSMISSION (GD-K71D, GD-V77D, GD-F77D / F77A)



2 TWO WIRE TYPE DIGITAL TRANSMISSION (DC POWER LINE COMMUNICATION)



3 OUTER DIMENSION

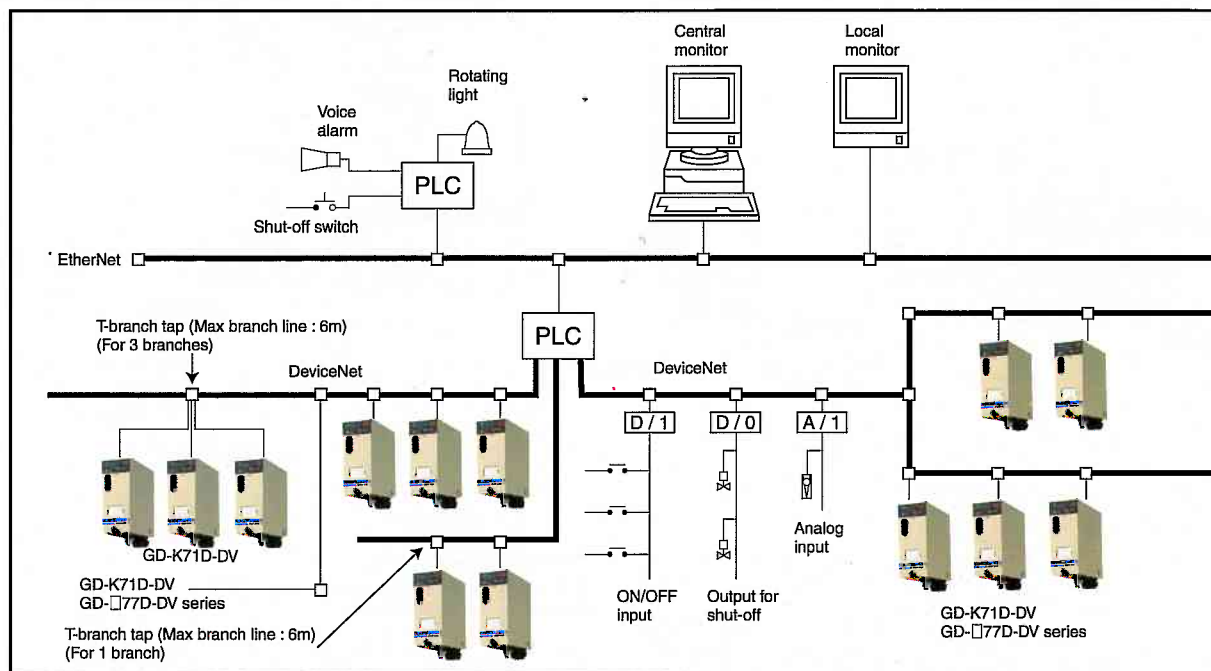


4 SPECIFICATIONS

Model	GD-K71D	GD-K71D-NT	GD-K71D-DV
Detection principle	Electrochemical cell		
Detection method	Sample-drawing type		
Detectable gas and measuring range	Refer to the list [DETECTABLE GASES]		
Signal transmission	Analog transmission (4-20mA)	DC power line communication	DeviceNet method
Gas concentration display	Digital LED display, 4 digit		
Gas alarm	Two alarm levels : 1st alarm (Yellow LED) : 2nd alarm (Red LED)		
Dry outputs for remote alarm	Dry contact for each 1st alarm, 2nd alarm and trouble alarm (NO or NC each)		
Alarm delay time	Approx 10-15 seconds when exposed to gas concentration of 1.6 times alarm level for most gases (Same as T60)		
Self diagnosis function	Trouble, low flow, system failure, communication error		
Operating conditions	0-40°C, 30-85% R. H.		
Power requirements	24 VDC $\pm$ 10%, Approx 10W		
Applicable cable	Shielded cable 3C, 1.25 sq (18 gage)	Shielded twisted one pair cable, 1.25 sq (18 gage)	Exclusive cable for DeviceNet
Structure, painting colour	Wall mounting, Munsel No. 2.5Y9/2 (Beige)		
Outer dimensions, weight	Approx 70(W) $\times$ 170(H) $\times$ 153(D)mm , Approx 2 kg Approx 2.8"(W) $\times$ 6.7"(H) $\times$ 6.0"(D) , Approx 4.4lb.		Approx 70(W) $\times$ 210(H) $\times$ 153(D)mm , Approx 2 kg Approx 2.8"(W) $\times$ 8.3"(H) $\times$ 6.0"(D) , Approx 4.4lb.
Applicable tubing for outer connection	O. D. ϕ 6-1t PTFE tubing. (Provided with P. P. coupling)		

● Specifications subject to change without notice.

5 BASIC SYSTEM FOR DeviceNet (Option)

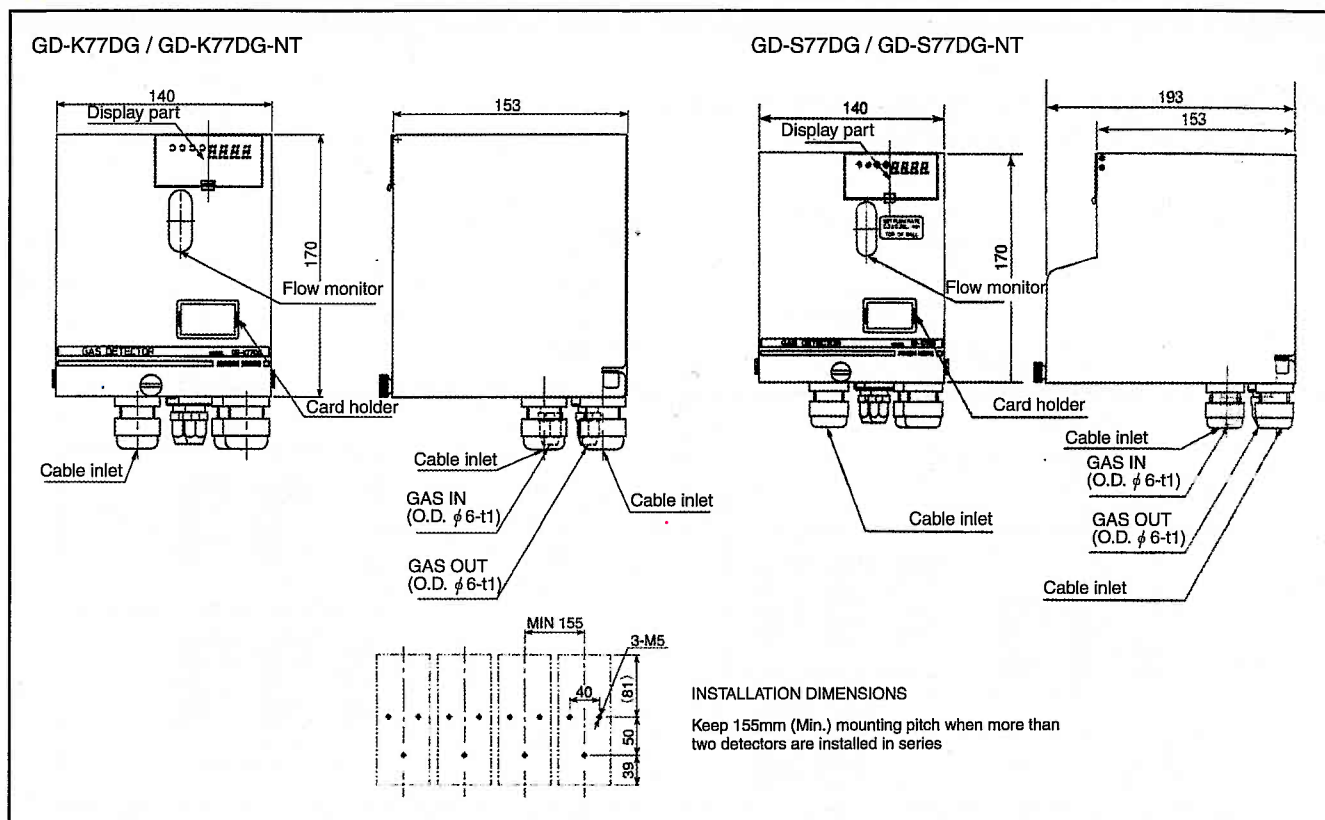


6 SPECIFICATIONS

Model	GD-V77D	GD-V77D-NT	GD-V77D-DV	GD-F77D	GD-F77D-NT	GD-F77D-DV
Detection principle	Semiconductor cell			Electrochemical (Galvanic) cell		
Detection method	Sample-drawing type					
Detectable gas and measuring range	H ₂ 0-2000ppm / CH ₂ F ₂ , 0-500ppm			O ₂ , 0-25%vol		
Signal transmission	Analog transmission (4-20mA)	Two wire digital transmission	DeviceNet method	Analog transmission (4-20mA)	Two wire digital transmission	DeviceNet method
Gas concentration display	Digital LED display, 4 digit					
Gas alarm	Two alarm levels : 1st alarm (Yellow LED) : 2nd alarm (Red LED)			18%vol (Yellow / Red LED) (Two alarm levels available)		
Dry outputs for remote alarm	Dry contact for each 1st alarm, 2nd alarm and trouble alarm (NO or NC each)			Dry contact for each low alarm and trouble alarm (NO or NC each)		
Alarm delay time	Approx 30 seconds when exposed to gas concentration of 1.6 times alarm level (Same as T60)			Approx 5 seconds when exposed to 10%vol, O ₂ .		
Self diagnosis function	Trouble, low flow, system failure, communication error			Trouble, system failure, communication error		
Operating conditions	0-40°C, 30-85% R. H.					
Power requirements	24 VDC ± 10%, Approx 13W			24 VDC ± 10%, Approx 9W		
Applicable cable	Shielded cable 3C, 1.25 sq (18 gage)	Shielded twisted one pair cable, 1.25 sq (18 gage) (KPEVS 1P 1.25sq)	Exclusive cable for DeviceNet	Shielded cable 3C, 1.25 sq (18 gage)	Shielded twisted one pair cable, 1.25 sq (18 gage) (KPEVS 1P 1.25sq)	Exclusive cable for DeviceNet
Structure, painting colour	Wall mounting, Munsel No. 2.5Y9/2 (Beige)					
Outer dimensions, weight	Approx 70(W) × 170(H) × 153(D)mm , Approx 2kg Approx 2.8"(W) × 6.7"(H) × 6.0"(D) , Approx 4.4lb. Approx 70(W) × 210(H) × 153(D)mm , Approx 2kg (DV only) Approx 2.8"(W) × 8.3"(H) × 6.0"(D) , Approx 4.4lb. (DV only)					
Applicable tubing for outer connection	O. D. ϕ6-1t PTFE tubing. (Provided with P. P. coupling)					

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7 OUTER DIMENSIONS



8 SPECIFICATIONS

Model	GD-K77DG	GD-K77DG-NT	GD-K77DG-DV	GD-S77DG	GD-S77DG-NT	GD-S77DG-DV
Detection principle	Pyrolysis-electrochemical cell			Pyrolysis-particle detection		
Detection method	Sample-drawing type			Sample-drawing type		
Detectable gas and measuring range	NF ₃ , 0-30ppm			TEOS, 0-15ppm		
Signal transmission	Analog transmission (4-20mA)	DC power line communication	DeviceNet method	Analog transmission (4-20mA)	DC power line communication	DeviceNet method
Gas concentration display	Digital LED display, 4 digit					
Gas alarm	Two alarm levels : 1st alarm (Yellow LED) : 2nd alarm (Red LED)					
Dry outputs for remote alarm	Dry contact for each 1st alarm, 2nd alarm and trouble alarm (NO or NC each)					
Alarm delay time	Approx 30 seconds when exposed to gas concentration of 1.6 times alarm level (Same as T60)					
Self diagnosis function	Trouble, low flow, system failure, communication error (NT only)					
Operating conditions	0-40°C, 30-85% R. H.					
Power requirements	24 VDC ± 10%, Approx 10W and 100 ~ 120VAC or 220 ~ 240VAC, 70VA					
Applicable cable	Shielded cable 3C, 1.25 sq (18 gage)	Shielded twisted one pair cable, 1.25 sq (18 gage) (KPEVS 1P 1.25sq)	Exclusive cable for DeviceNet	Shielded cable 3C, 1.25 sq (18 gage)	Shielded twisted one pair cable, 1.25 sq (18 gage) (KPEVS 1P 1.25sq)	Exclusive cable for DeviceNet
Structure, painting colour	Wall mounting, Munsel No. 2.5Y9/2 (Beige)					
Outer dimensions, weight	Approx 140(W) × 170(H) × 153(D)mm , Approx 3.2kg Approx 5.6"(W) × 6.7"(H) × 6.0"(D) , Approx 7.0lb. Approx 140(W) × 210(H) × 153(D)mm , Approx 3.5kg (DV only) Approx 5.6"(W) × 8.3"(H) × 6.0"(D) , Approx 7.0lb.(DV only)			Approx 140(W) × 170(H) × 193(D)mm , Approx 3.2kg Approx 5.6"(W) × 6.7"(H) × 7.7"(D) , Approx 7.0lb. Approx 140(W) × 210(H) × 193(D)mm , Approx 3.5kg (DV only) Approx 5.6"(W) × 8.3"(H) × 7.7"(D) , Approx 7.0lb.(DV only)		
Applicable tubing for outer connection	O. D. φ6-1t PTFE tubing. (Provided with P. P. coupling)					

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DETECTABLE GASES

Name of gases		ACGIH TLV-TWA	Measuring range	Preset alarm level (Standard)	Sensor
Ammonia	NH ₃	25ppm	0~75ppm	25ppm	ESM-23R
Antimony Pentachloride	SbCl ₅	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Arsenic Pentachloride	AsCl ₅	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Arsenic Pentafluoride	AsF ₅	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Arsenic Trichloride	AsCl ₃	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Arsenic Trifluoride	AsF ₃	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Arsine	AsH ₃	0.05ppm	0~0.2ppm	0.05ppm	ESM-23AHS
Boron Tribromide	BBr ₃		HBr 0~9ppm	3ppm	ESM-23E
Boron Trichloride	BCl ₃	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Boron Trifluoride	BF ₃	1ppm(C)	HF 0~9ppm	3ppm	ESM-K233
Bromine	Br ₂	0.1ppm	0~1ppm	0.1ppm	ESM-K233
Chlorine	Cl ₂	0.5ppm	0~1.5ppm	0.5ppm	ESM-K233
Chlorine Trifluoride	ClF ₃	0.1ppm	0~1ppm	0.2ppm	ESM-K233
Diborane	B ₂ H ₆	0.1ppm	0~0.3ppm	0.1ppm	ESM-23AY
Dichlorosilane	SiH ₂ Cl ₂	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Disilane	Si ₂ H ₆	5ppm	0~15ppm	5ppm	ESM-23AH
Fluorine	F ₂	1ppm	0~3ppm	1ppm	ESM-K233
Germane	GeH ₄	0.2ppm	0~0.8ppm	0.2ppm	ESM-23DH
Germanium Tetrachloride	GeCl ₄	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Hydrogen Bromide	HBr	3ppm(C)	0~9ppm	3ppm	ESM-23E
Hydrogen Chloride	HCl	5ppm(C)	0~15ppm	5ppm	ESM-23E
Hydrogen Fluoride	HF	3ppm(C)	0~9ppm	3ppm	ESM-K233
Hydrogen Iodine	HI		0~5ppm	2ppm	ESM-23E
Hydrogen Selenide	H ₂ Se	0.05ppm	0~0.2ppm	0.05ppm	ESM-23SD
Hydrogen Sulfide	H ₂ S	10ppm	0~1ppm	0.3ppm	ESM-23AH
Iodine	I ₂	0.1ppm(C)	0~1ppm	0.3ppm	ESM-K233
Molybdenum Hexafluoride	MOF ₆	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Nitrogen Dioxide	NO ₂	3ppm	0~15ppm	3ppm	ESM-23AH
Ozone	O ₃	0.1ppm(C)	0~0.6ppm	0.1ppm	ESM-K239C
Phosphine	PH ₃	0.3ppm	0~1ppm	0.3ppm	ESM-23AH
Phosphorus Oxychloride	POCl ₃	0.1ppm	HCl 0~15ppm	5ppm	ESM-23E
Phosphorus Pentafluoride	PF ₅	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Phosphorus Trichloride	PCl ₃	0.2ppm	HCl 0~15ppm	5ppm	ESM-23E
Phosphorus Trifluoride	PF ₃	1ppm	0~10ppm	2ppm	ESM-23DH
Silane	SiH ₄	5ppm	0~15ppm	5ppm	ESM-23DH/23AH
Silicone Tetrachloride	SiCl ₄	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Silicone Tetrafluoride	SiF ₄	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Sulfur Tetrafluoride	SF ₄	0.1ppm	HF 0~9ppm	3ppm	ESM-K233
Tantalum Fluoride	TaF ₅	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233
Tin Tetrachloride	SnCl ₄	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Trichlorosilane	SiHCl ₃	HCl 5ppm	HCl 0~15ppm	5ppm	ESM-23E
Tungsten Hexafluoride	WF ₆	HF 3ppm	HF 0~9ppm	3ppm	ESM-K233

For gases not listed above, contact us or our nearest agent.

★ Distributed by:



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33248 Central Avenue Union City, CA 94587

Toll Free: (800) 754-5165 • Phone: (510) 441-5656 • Fax: (510) 441-5650
mail4rki@rkiinstruments.com • www.rkiinstruments.com