



GAS & FLAME

DETECTION

SYSTEM

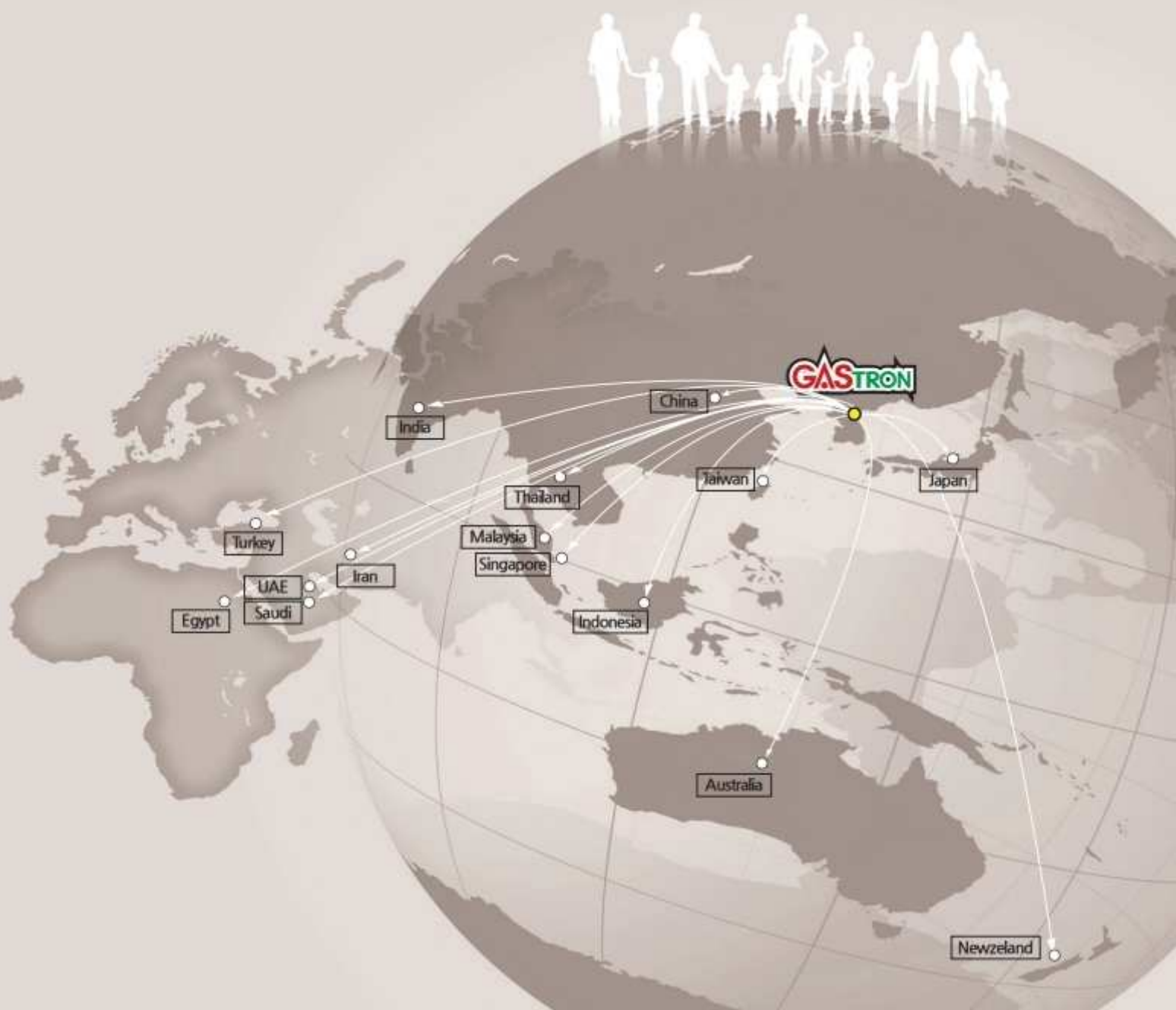
PRODUCT CATALOGUE



Message

The Safety Guide GASTRON

Gastron, established in 1992, is a safety equipment manufacturer specialized in the gas detection system. For more than 20 year Gastron has dedicated itself in protecting people's life and property from potential accidents. Gastron always puts the safety of users on the top of their priority list. With their restless efforts of improving products' quality, they have received variety of certificates such as UL, ATEX, IECEx, NEPSI, CCCF, MED, KR, BV, ABS, DNV, SIL2, KCs, KC, and over 20 numbers of domestic certificates. The continuous development of technologies and endless investment on acquiring international standards have come the foundation finding a way over the domestic market into the worldwide. Gastron is the leading company of gas detector systems and keeps expanding their business area in various types of industries. As the user-oriented products manufacturer, supplying with the best quality safety products is Gastron's vocation.





Global Gastron

GAS & FLAME DETECTION SYSTEM

Introduction

Company name	: GASTRON Co., Ltd.
President	: Mr. Choi, Dong-Jin
Established	: June. 26, 1992
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Factory	: 18-8, Dogeumdanji1(il)-gil, Sangrok-gu, Ansan-si, Gyeonggi-do, Korea
Busan branch	: 55, Gonghangap-gil 85beon-gil, Gangseo-gu, Busan, Korea
Product	- Industrial Fixed Gas Detector - Monitoring System Engineering (HMI & PLC) - Colorimetric Gas Detector - Open Path Gas Detector - Portable Gas Detector - Vision Gas Camera & Thermal Imaging Camera - Alarm Signalling / Manual Call Point - Flame Detector - Acid Leak Detection Paint - Safety Shield

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Gas Monitoring System

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GTD-2000VOC

GTD-5000VOC

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GIR-3000

GTD-5000F IR

GIR-3000A

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GTD-5100F Ex

GTD-5000F Ex

GTD-3000Ex

GTD-2000Ex

GTD-1000Ex

GTD-5000Ex

GTD-6000Ex

50 Page Fixed type Oxygen & Toxic Gas Detector



GTD-5100F Tx

GTD-5000F Tx

GTD-3000Tx

GTD-2000Tx

GTD-1000Tx

GTD-5000Tx

GTD-6000Tx



GTC-200A

GTC-200F

GTC-540/550

GTC-520F

GTC-700

GMS-2000



GPD-100



GTF-1000



GTL-200

GTL-200B

GTL-200L



Can gas

Cylinder gas



Semiconductor Industry

Fixed Type Multi Gas Detector Spec.

Model	GTM-1000	GTM-2000
		
Enclouse Type	Non-Explosion proof	
Measuring Method	Suction	
Local Display	LCD	
Analog output	4-20mA	
Digital output (Option)	RS-485/POE	
Alarm Output Relay	2-stage alarm, 1-trouble alarm	
Operation Power	24V DC / PoE(Optional)	
Local Certificate	KC	
Ingress Protection	IP65	
Oversea Certificate	CE	
Classification (Marine)	N/A	

01

Fixed Type Multi Gas Detector



Multi Type Infrared Gas Detector
GTM-1000



Multi Type Gas Detector
GTM-2000

GAS TRON

01 - Fixed Type Multi Gas Detector

Multi Type Infrared Gas Detector

GTM-1000

(C4F6, CH2F2, CH3F, C5F8, C4F8 & etc)

Feature

- ▷ Selectivity 1-4 gases
- ▷ Apply algorithm to prevent malfunction for interference gas
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Built in Data & Event Logging
- ▷ Parameter setting with Color graphic LCD
- ▷ Self diagnosis function
- ▷ Flow Sensor to control flow rate automatically
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus (Isolated) and POE communication
- ▷ Calibration and maintenance by one-man



Interference Gas Leak Alarm



Gas Leak Alarm



General

Dimension (Unit:mm)



Accessories



Specification

* Specifications are subject to be changed without prior notice.

MULTI TYPE 4 GAS DETECTOR GTM-1000				
Model	GTM-1000 Series			
Measuring gas	Freon gas	Flammable gases	VOC gases	O ₂ /Toxic gases (CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type			
Measuring method	Infra-red	Catalytic cell, Infra-red	Photo-Ionization Detector(PID)	Electrochemical cell
Measuring range	0~2000ppm	0~5000ppm, 100%LEL, 100%Vol	5ppb ~ 300ppm	Customized Specification
Response time	< 7sec / 90% scale	< 15sec / 90% scale	< 5sec / 90% scale	< 45sec / 90% scale
Accuracy	± 3% / Full Scale			
Parameter control	Front switch (calibration, maintenance, alarm setting)			
Operation mode display	Power / Alarm / Trouble / Status LED			
Measuring value display	Color graphic LCD display (Gas value, Gas name, Flow, Error etc.)			
Alarm signal output	4 Gas - 250V 5A / 3-SPST relay contact (2-stage alarm, 1-trouble)			
Output signal	4 Gas - Analog output : 4~20mA DC Digital output : RS-485 Modbus / PoE (Power over Ethernet) (option)			
Sampling method	Diaphragm Pump			
Sampling line	OD 1/4" (Standard)			
Flow rate	0 ~ 1.000 ml/min max. (Normal 500ml/min)			
Cable/Distance	Power + Signal cable : > 1.5sq (AWG16) / 1000m max 4 - 20mA DC Signal : 2000m RS-485 Modbus Signal : 1000m			
Cable Port	PG connector (PG11~PG25)			
Mounting type	Wall mount			
Operating temperature	-20℃ ~ +50℃			
Operating humidity	5 to 99% RH (Non-condensing)			
Operating power	21 ~ 27V DC (24V DC normal) / 500mA max.			
Material	Polycarbonate			
Dimensions	280 (W) × 244 (H) × 154 (D) mm			
Weight	2.5kg			
Ingress Protection	IP65			
Approval	CE, KC			

GAS TRON

01 - Fixed Type Multi Gas Detector

Multi Type Gas Detector

(Flammable, Oxygen, Toxic Gas)

GTM-2000

(CH₄, CO, COS, H₂ & etc)

Feature

- ▷ Selectivity 1-4 gases
- ▷ Apply algorithm to prevent malfunction for interference gas
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Built in Data & Event Logging
- ▷ Parameter setting with Color graphic LCD
- ▷ Self diagnosis function
- ▷ Flow Sensor to control flow rate automatically
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus (Isolated) and POE communication
- ▷ Calibration and maintenance by one-man



Interference Gas Leak Alarm



Gas Leak Alarm



General

Dimension (Unit:mm)



Accessories



Specification

* Specifications are subject to be changed without prior notice.

MULTI TYPE 4 GAS DETECTOR GTM-2000			
Model	GTM-2000 Series		
Measuring gas	Flammable gases	VOC gases	O ₂ /Toxic gases(CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type		
Measuring method	Catalytic cell	Photo-Ionization Detector(PID)	Electrochemical cell
Measuring range	0~5000ppm, 100%LEL, 100%Vol	5ppb ~ 300ppm	Customized Specification
Response time	< 15sec / 90% scale	< 5sec / 90% scale	< 45sec / 90% scale
Accuracy	±3% / Full Scale		
Parameter control	Front switch (calibration, maintenance, alarm setting)		
Operation mode display	Power / Alarm / Trouble / Status LED		
Measuring value display	Color graphic LCD display (Gas value, Gas name, Flow, Error etc.)		
Alarm signal output	4 Gas ~ 250V 5A / 3-SPST relay contact (2-stage alarm, 1-trouble)		
Output signal	4 Gas ~ Analog output : 4~20mA DC Digital output : RS-485 Modbus / PoE(Power over Ethernet) (option)		
Sampling method	Diaphragm Pump		
Sampling line	OD 1/4" (Standard)		
Flow rate	0 ~ 1,000 ml/min max (Normal 500ml/min)		
Cable/Distance	Power + Signal cable : > 1.5sq(AWG16) / 1000m max 4 ~ 20mA DC Signal : 2000m RS-485 Modbus Signal : 1000m		
Cable Port	PG connector (PG11~PG25)		
Mounting type	Wall mount		
Operating temperature	-20°C ~ +50 °C		
Operating humidity	5 to 99% RH (Non-condensing)		
Operating power	21 ~27V DC (24V DC normal) / 500mA max.		
Material	Polycarbonate		
Dimensions	280 (W) × 244 (H) × 154 (D) mm		
Weight	2.5kg		
Ingress Protection	IP65		
Approval	CE, KC		

GAS & FLAME
DETECTION
SYSTEM

Offshore (Marine) Industry

Gas Sampling Monitoring System

Gas Monitoring System



02 Gas Detection System



Gas Sampling Monitoring System
Gas Monitoring System



Gas Sampling System for LNG/Drill ship



<HC IR Gas detector>



<O2 Gas detector>



<H2S Gas detector>

Receiver's Feature

- ▷ Excellent color display
- ▷ Switch User/Manage mode
- ▷ Password function
- ▷ Touch screen
- ▷ Easy timing regulating
- ▷ All point on a screen monitoring
- ▷ Easy expandability
- ▷ Record gas alarm data



Fixed type VOC Gas Detector Spec. Comparison

Model	GTD-5100F VOC	GTD-5000F VOC	GTD-2000VOC	GTD-5000VOC
				
Enclosure Type	Explosion proof			Non-Explosion proof
Measuring Method	Suction		Diffusion	Suction
Local Display	FND(4-Digit)		LCD / OLED(Optional)	LCD
Analog output	4-20mA			
Digital output (Option)	RS-485		HART	RS-485, PoE
Alarm Output Relay	2-stage alarm, 1-trouble alarm		N/A	2-stage alarm, 1-trouble alarm
Operation Power	24V DC			24V DC / PoE(Optional)
Local Certificate	KCs	KCs, KC	KCs, KC	N/A
Oversea Certificate	CE	ATEX, IECEx, NEPSI, CE	ATEX, IECEx, NEPSI, CE, SIL 2, UL	CE
Classification (Marine)	N/A		MED, ABS, DNV, KR	N/A

03

Fixed type VOC Gas Detector



Flame Proof Type Sampling VOC Gas Detector
GTD-5100F VOC



Flame Proof Type Sampling VOC Gas Detector
GTD-5000F VOC



Flame Proof Type Diffusion VOC Gas Detector
GTD-2000VOC



Intelligent & Sampling Type VOC Gas Detector
GTD-5000VOC

Flame Proof Type Sampling VOC Gas Detector

GTD-5100F VOC

Feature

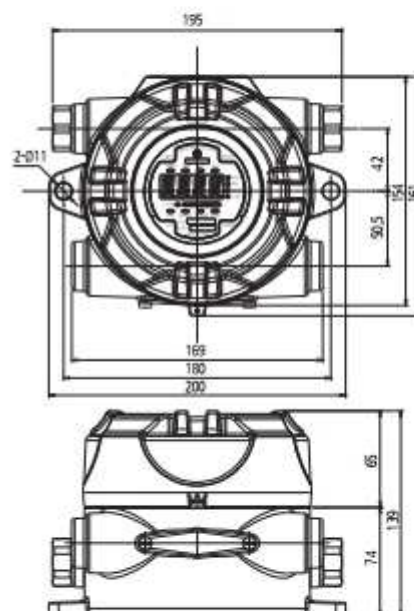
- ▷ Continuous detection of VOC gas in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with magnet bar on FND display board
- ▷ 4-Digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus (Isolated) Serial data communication (Option)
- ▷ 3-Wire Type
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Cable gland



Male connector



Micro Filter



RS-485 module

Specification

※ Specifications are subject to be changed without prior notice.

EXPLOSION PROOF & SAMPLING TYPE VOC GAS DETECTOR	
Model	GTD-5100F VOC
Measuring gas	VOC gases(Benzene, Toluene, Xylene & etc)
Measuring type	Auto Sampling type
Measuring method	Photo-Ionization Detector(PID)
measuring	0 ~ 9999 Adjustable
Response time	< 5sec / 90% scale
Accuracy	± 3% / Full Scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)
Operation mode display	Alarm / Trouble LED, Flow rate
Measuring value display	FND Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4" (Standard)
Flow rate	0 ~ 1000 ml/min Max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) 4 ~ 20mA DC Signal : 2500m RS-485 Modbus Signal : 1000m PoE(Power over Ethernet) : 100m max
Conduit connection	G, R(Rc), NPT 1/2" & 3/4" (G 3/4" : Standard)
Mounting type	Wall mount
Operating temperature	-40℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 280mA
Material	ALDC
Dimensions	195(w)x139(h)x154(d)mm
Weight	4kg
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs, CE

Flame Proof Type Sampling VOC Gas Detector

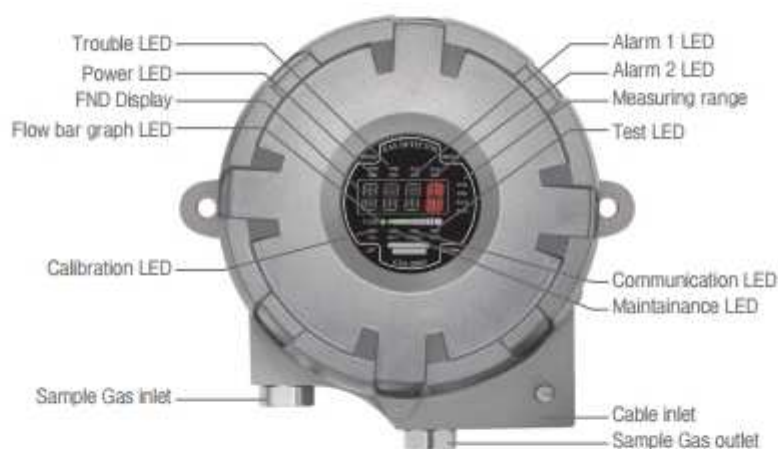
GTD-5000F VOC

Feature

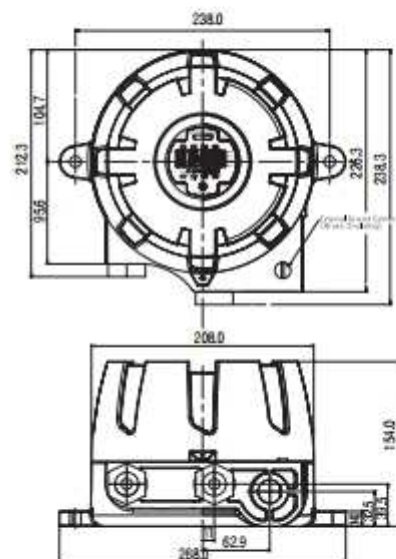
- ▷ Continuous detection of VOC gas in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication(Optional)
- ▷ 3-wire connection for signal & power
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

※ Specifications are subject to be changed without prior notice.

EXPLOSION PROOF & SAMPLING TYPE VOC GAS DETECTOR	
Model	GTD-5000F VOC
Measuring gas	VOC gases(Benzene, Toluene, Xylene & etc)
Measuring type	Auto Sampling type
Measuring method	Photo-Ionization Detector(PID)
Measuring range	5ppb ~ 300ppm
Response time	< 5sec / 90% scale
Accuracy	±3% / Full Scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)
Operation mode display	Alarm / Trouble LED, Flow rate
Measuring value display	FND Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4" (Standard)
Flow rate	0 ~ 1000 ml/min Max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) 4 ~ 20mA DC Signal : 2500m RS-485 Modbus Signal : 1000m
Conduit connection	M20 x 1.5P, M25x1.5P, NPT 1/2", NPT 3/4"
Mounting type	Wall mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 150mA max
Material	ALDC
Dimensions	226.3(W) × 154(H) × 238(D) mm
Weight	5kg
Approval	Explosion proof type (Exd IIB + H2 T5/T6) IECEx, ATEX, NEPSI, KC, CE

Flame Proof Type Diffusion VOC Gas Detector

GTD-2000VOC

Feature

- ▷ Continuous detection of VOC gas in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Multi functions and high quality with low cost of ownership
- ▷ Built-in back light LCD or OLED display
- ▷ Easy Configuration of monitoring by HART communication
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-20mA DC output signal
- ▷ With the alarm unit
 - Normal : Green LED
 - Alarm : Red LED, Buzzer(95 dB)
 - Trouble : Yellow LED
- ▷ 3-wire connection for signal & power
- ▷ Calibration and maintenance by one-man

Special Application



Alarm Beacon Type



SIL2

IEC 61508
Safety Integrity Level

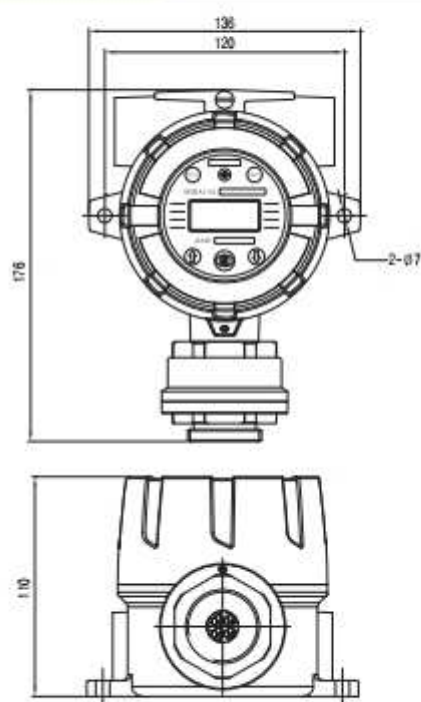
HART
COMMUNICATION PROTOCOL



General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

SMART & LOCAL DISPLAY TYPE VOC GAS DETECTOR	
Model	GTD-2000VOC
Measuring gas	VOC gases(Benzene, Toluene, Xylene & etc)
Measuring type	Diffusion type
Measuring method	Photo-Ionization Detector(PID)
Measuring range	5ppb ~ 300ppm
Response time	< 5sec / 90% scale
Accuracy	±3% / Full scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance)
Operation mode display	1-LED (Power)
Measuring value display	LCD display (Built in back light 2-Line, 8 characters) / OLED Type (Option)
Output signal	Analog : Measuring signal : 4~20mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : 2mA (HART 7, HART Device Description Language available, Option)
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max.
Material	Housing : ALDC, SUS316(Option) / Sensor : SUS316
Conduit connection	M20 x 1.5P, M25x1.5P, NPT 1/2", NPT 3/4"
Mounting type	2" Pole mount, Wall mount, Duct mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 ~ 99%RH (non-condensing)
Operating power	18~31V DC (24V DC normal) / 200mA max
Dimensions	136x166x110 (WxHxD)mm
Weight	1.5kg
Approval	Explosion proof type (Ex d IIC T5) KCs / IP66/67 Explosion proof type (Ex d IIC Gb T4/T6) ATEX, IECEx Explosion proof type (Ex d IIC T5 Gb) NEPSI Marine : KR, MED, ABS, DNV CE, HART, SIL 2

Intelligent & Sampling Type VOC Gas Detector

GTD-5000VOC

Feature

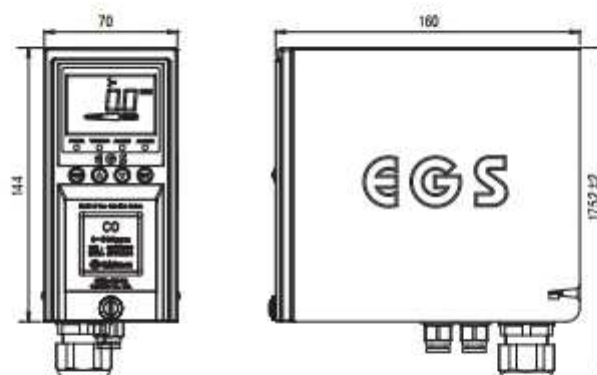
- ▷ Fast response of VOC gas leakage with a high efficient pump inside
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Fine LCD display for showing various information
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication or PoE(Optional)
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 3-wire connection for signal & power
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

*Specifications are subject to be changed without prior notice.

	INTELLIGENT & SAMPLING TYPE VOC GAS DETECTOR
Model	GTD-5000VOC
Measuring gas	VOC gases(Benzene, Toluene, Xylene & etc)
Measuring type	Auto Sampling type
Measuring method	Photo-Ionization Detector(PID)
Measuring range	5ppb ~ 300ppm
Response time	< 5sec / 90% scale
Accuracy	±3% / Full scale
Parameter control	Front switch (calibration, maintenance, alarm setting)
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)
Measuring value display	LCD Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	4-20mADC RS-485 Modbus(Optional) / PoE(Power over Ethernet)(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4" (Standard)
Flow rate	0 ~ 1000 ml/min max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) / 2500m max RS-485 data communication cable : 1 pair(UL2919 RS-485) / 1000m max PoE(Power over Ethernet) : 100m max
Conduit connection	Cable gland(PG-16)
Mounting type	Wall mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 280mA max PoE(NOTE 1) : 48V DC ±10% / 200mA max
Material	Front(Poly carbonate), Sides(Steel)
Dimensions	Standard type : 70(W) × 144(H) × 160(D) mm
Weight	Standard type : 2.5kg
Approval	CE (EN50270:1999)
NOTE 1	DC 24V should be supplied if you want to use Pyrolyzer in case of using PoE power

Fixed type Infrared Gas Detector Spec. Comparison

Model	GIR-3000	GTD-5000F IR	GIR-3000A
			
Enclosure Type	Explosion proof		
Measuring Method	Diffusion	Suction	Diffusion
Local Display	LCD / OLED(Optional)	FND(4-Digit)	LCD / OLED(Optional)
Analog output	4-20mA		
Digital output(Optional)	RS-485, HART	RS-485	RS-485, HART
Alarm Output Relay	2-stage alarm, 1-trouble alarm		
Operation Power	24V DC		
Local Certificate	KCs, KFI	KCs	KCs, KFI
Oversea Certificate	ATEX, IECEx, NEPSI, CE, SIL 2, UL	ATEX, IECEx, NEPSI, CE	N/A
Classification(Marine)	MED, ABS, DNV, KR	N/A	

04 Fixed type Infrared Gas Detector



Flame Proof Type Diffusion Infrared Gas Detector
GIR-3000



Flame Proof Type Sampling Infrared Gas Detector
GTD-5000F IR



Remote or Blind Type Infrared Gas Detector
GIR-3000A

Flame Proof Type Diffusion Infrared Gas Detector

GIR-3000 Series

Feature

- ▷ Continuous detection of flammable, CO₂, CO and N₂O gases in explosion hazardous area with flame proof structure
- ▷ State-of-the art infrared detection principle
- ▷ Long service life time (more than 5 years)
- ▷ Low operation cost due to maintenance free
- ▷ Operation in non oxygen environment
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Fast response time (<3 sec)
- ▷ Built-in back light LCD or OLED display
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication or HART communication (Option)
- ▷ With the alarm unit, GTL-100
 - Normal : Green LED
 - Alarm : Red LED, Buzzer (95dB)
 - Trouble : Yellow LED
- ▷ Calibration and maintenance by one-man

Special Application



Alarm Beacon Type
(Alarm device)



SIL2

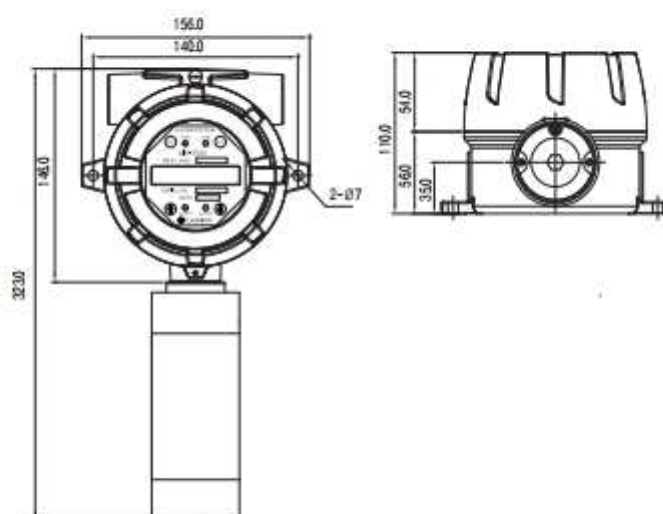
IEC 61508
Safety Integrity Level

HART
COMMUNICATION PROTOCOL



General

Dimension (Unit:mm)



Accessories



Specification

* Specifications are subject to be changed without prior notice.

	SMART & LOCAL DISPLAY TYPE INFRARED GAS DETECTOR				
Model	GIR-3000				
Measuring gas	Hydrocarbon gases (LNG, LPG, Methane, Butane & etc)		CO ₂	CO, N ₂ O	
Measuring type	Diffusion type				
Measuring method	Infrared type				
Measuring range	0~100% LEL	0~5000ppm	0~100% Vol	0~2.0% Vol	0~5.0% Vol, 0~4000ppm
Sensor life time	Over 5 years				
Response time	<6sec / 90% scale, <3sec / 50% scale				
Accuracy	± 3% / Full scale				
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)				
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)				
Measuring value display	LCD display (Built-in back light 2-Line, 16 characters) / OLED Type (Option)				
Alarm signal output	250V 1A / 3-SPST Relay contact (2-stage alarm, 1-trouble)				
Output signal	Analog : Measuring signal : 4~20mA DC				
	Maintenance signal : 3mA DC				
	Calibration signal : 3mA DC				
	Fault signal : 0mA DC				
	Digital : RS-485 Modbus (Option)				
Cable / Distance	2mA (HART 7, HART Device Description Language available, Option)				
	Power + signal cable : 3 wire >1.5sq(AWG16) / 500m normal RS-485 data communication cable : 1 pair (UL2919 RS-485) / 1000m max				
Material	Housing : ALDC, SUS316(Optional) / Sensor : SUS316				
Conduit connection	M20 x 1.5P, M25x1.5P, NPT ½", NPT ¾" / NPT ½", ¾" (UL)				
Mounting type	2" Pole mount, Wall mount, Duct mount				
Operating temperature	-20℃ ~ +60℃ / -40℃ ~ +80℃(Option)				
Operating humidity	5 ~ 99% RH (non-condensing)				
Operating power	18 ~ 31V DC (24V DC normal) / 400mA max.				
Dimensions	156 X 323 X 110 (W X H X D)mm				
Weight	3kg				
Approval	Explosion proof type (Ex d IIC T6) KCs / IP66/67				
	Explosion proof type (Ex d IIC Gb T4/T6) ATEX, IECEx				
	Explosion proof type (Ex d IIC T6 Gb) NEPSI				
	Marine : KR, MED, ABS, DNV KfI, CE, HART, SIL 2, IIL				

Flame Proof Type Sampling Infrared Gas Detector

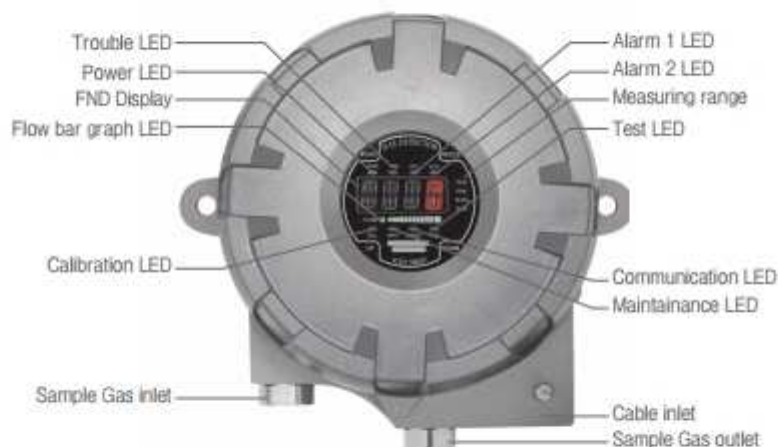
GTD-5000F IR

Feature

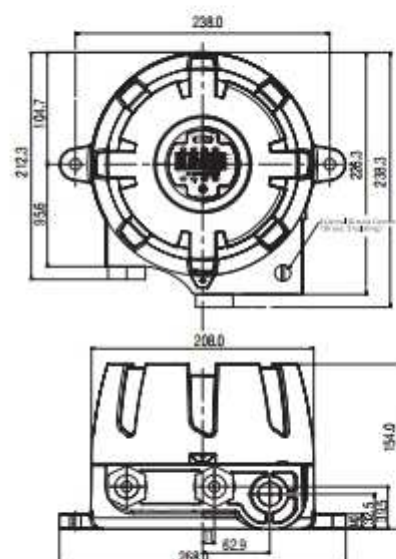
- ▷ Continuous detection of flammable, CO₂, CO and N₂O gas in explosion hazardous area with flame proof structure
- ▷ State-of-the art infrared detection principle
- ▷ Operation in non oxygen environment
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response detection of gas leakage with a high efficient pump inside
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Fast response time(<3 sec)
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication(Optional)
- ▷ 3-Wire Type
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

*Specifications are subject to be changed without prior notice.

EXPLOSION PROOF & SAMPLING TYPE INFRARED GAS DETECTOR						
Model	GTD-5000F IR					
Measuring gas	Hydrocarbon gases (LNG, LPG, Methane, Buthane & etc)			CO ₂	CO, N ₂ O	
Measuring type	Auto Sampling type					
Measuring method	Infrared type					
Measuring range	0~100% LEL	0~5000ppm	0~100% Vol	0~2.0% Vol	0~5.0% Vol, 0~4000ppm	
Sensor life time	Over 5 years					
Response time	< 6sec / 90% scale, < 3sec / 50% scale					
Accuracy	± 3% / Full Scale					
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)					
Operation mode display	Alarm / Trouble LED , Flow rate					
Measuring value display	FND Display(4-Digit)					
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)					
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)					
Sampling method	Diaphragm Pump					
Sampling line	OD 1/4 "(Standard)					
Flow rate	0 ~ 1000 ml/min Max					
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) 4 ~ 20mA DC Signal : 500m RS-485 Modbus Signal : 1000m					
Conduit connection	M20 x 1.5P, M25x1.5P, NPT ½" , NPT ¾"					
Mounting type	Wall mount					
Operating temperature	-20℃ ~ +60℃					
Operating humidity	5 to 99% RH (Non-condensing)					
Operating power	Standard : 18 ~31V DC (24V DC normal) / 500mA max					
Material	ALDC					
Dimensions	226.3(W) × 154(H) × 238(D) mm					
Weight	5kg					
Approval	Explosion proof type (Exd 11b + H2) ATEX,IECEx, NEPSI , CE, KFI, KC					

Remote or Blind Type Infrared Gas Detector

GIR-3000A (GSA920+JBOX)

Feature

- ▷ Continuous detection of flammable, CO₂, CO and N₂O gases in explosion hazardous area with flame proof structure
- ▷ State-of-the art infrared detection principle
- ▷ Long service life time(more than 5 years)
- ▷ Low operation cost due to maintenance free
- ▷ Operation in non oxygen environment
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Fast response time(<3 sec)
- ▷ Built-in back light LCD or OLED display(Only GiR-3000A)
- ▷ Auto calibration and program setting with a magnet bar or remote control GAS-920L
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication or HART communication(Only GiR-3000A)
- ▷ Calibration and maintenance by one-man



General



Accessories



Specification

* Specifications are subject to be changed without prior notice.

	SMART & LOCAL DISPLAY TYPE INFRARED GAS DETECTOR				
Model	GIR-3000A				
Measuring gas	Hydrocarbon gases (LNG, LPG, Methane, Butane & etc)		CO ₂	CO, N ₂ O	
Measuring type	Diffusion type				
Measuring method	Infrared type				
Measuring range	0~100% LEL	0~5000ppm	0~100% Vol	0~2.0% Vol	0~5.0% Vol, 0~4000ppm
Sensor life time	Over 5 years				
Response time	<6sec / 90% scale, <3sec / 50% scale				
Accuracy	± 3% / Full scale				
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)				
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)				
Measuring value display	LCD display (Built-in back light 2-Line, 16 characters) / OLED Type (Option)				
Alarm signal output	250V 1A / 3-SPST Relay contact (2-stage alarm, 1-trouble)				
Output signal	Analog : Measuring signal : 4~20mA DC				
	Maintenance signal : 3mA DC				
	Calibration signal : 3mA DC				
	Fault signal : 0mA DC				
	Digital : RS-485 Modbus (Option)				
Cable / Distance	2mA (HART 7, HART Device Description Language available, Option)				
	Power + signal cable : 3 wire >1.5sq(AWG16) / 500m normal				
	RS-485 data communication cable : 1 pair (UL2919 RS-485) / 1000m max				
Material	Housing : ALDC, SUS316(Option) / Sensor : SUS316				
Conduit connection	M20 x 1.5P, M25x1.5P, NPT ½" , NPT ¾"				
Mounting type	2" Pole mount, Wall mount, Duct mount				
Operating temperature	-20℃ ~ +60℃				
Operating humidity	5 ~ 99% RH (non-condensing)				
Operating power	18 ~ 31V DC (24V DC normal) / 100mA max.				
Dimensions	156 X 323 X 110 (W X H X D)mm				
Weight	3kg				
Approval	Explosion proof type (Ex d IIC T6) KCs / IP65 KFI, CC, CF, CE				

Fixed type Flammable Gas Detector Spec. Comparison

Model	GTD-5100F Ex	GTD-5000F Ex	GTD-3000Ex	GTD-2000Ex	GTD-1000Ex	GTD-5000Ex	GTD-6000Ex
							
Endouse Type	Explosion proof					Non-Explosion proof	
Measuring Method	Suction		Diffusion			Suction	Diffusion
Local Display	FND(4-Digit)		LCD / OLED(Optional)		N/A	LCD	FND(4-Digit)
Analog output	4-20mA						
Digital output(Optional)	RS-485			HART	N/A	RS-485, PoE	RS-485
Alarm Output Relay	2-stage alarm 1-trouble alarm			N/A		2-stage alarm, 1-trouble alarm	3-stage alarm, 1-trouble alarm
Operation Power	24V DC					24V DC PoE(Optional)	AC90~250V / 24V DC(Optional)
Local Certificate	KCs	KCs, KFI	KCs	KCs, KFI		N/A	
Oversea Certificate	CE	ATEX, IECEX, NEPSI, CE, KC	NEPSI, CE	ATEX, IECEX, NEPSI, CE, SIL 2, UL, KC	CE		CE
Classification (Marine)	N/A			MED, ABS, DNV, KR	N/A		

05

Fixed type Flammable Gas Detector



Flame Proof Type Sampling VOC Gas Detector
GTD-5100F Ex



Flame Proof Type Sampling Flammable Gas Detector
GTD-5000F Ex



Intelligent Diffusion Flammable Gas Detector
GTD-3000Ex



SMART Diffusion Flammable Gas Detector
GTD-2000Ex



Transmitter Diffusion Flammable Gas Detector
GTD-1000Ex



Sampling Flammable Gas Detector
GTD-5000Ex



Gas Receiver Combination Flammable Gas Detector
GTD-6000Ex

Flame Proof Type Sampling VOC Gas Detector

GTD-5100F Ex

Feature

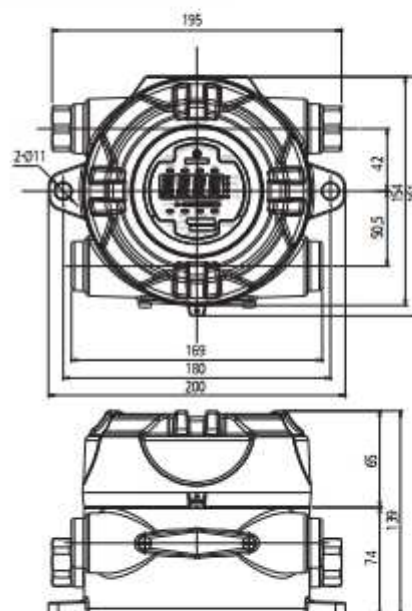
- ▷ Continuous detection of VOC gas in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with magnet bar on FND display board
- ▷ 4-Digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus (Isolated) Serial data communication (Option)
- ▷ 3-Wire Type
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

	EXPLOSION PROOF & SAMPLING TYPE FLAMMABLE GAS DETECTOR		
Model	GTD-5100F Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Auto Sampling type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	< 15sec / 90% scale		
Accuracy	± 3% / Full Scale		
Parameter control	Front switch (calibration, maintenance, alarm setting)		
Operation mode display	Alarm / Trouble LED , Flow rate		
Measuring value display	FND Display(4-Digit)		
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)		
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)		
Sampling method	Diaphragm Pump		
Sampling line	OD 1/4" (Standard)		
Flow rate	0 ~ 2000 ml/min max		
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) / 1000m max 4 ~ 20mA DC Signal : 2000m RS-485 Modbus Signal : 1000m PoE(Power over Ethernet) : 100m max		
Conduit connection	G, R(Rc), NPT 1/2" & 3/4" (G 3/4" : Standard)		
Mounting type	Wall mount		
Operating temperature	-40℃ ~ + 60℃		
Operating humidity	5 to 99% RH (Non-condensing)		
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 600mA max		
Material	ALDC		
Dimensions	195(w)x139(h)x154(d)mm		
Weight	4kg		
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs, CE		

Flame Proof Type Sampling Flammable Gas Detector

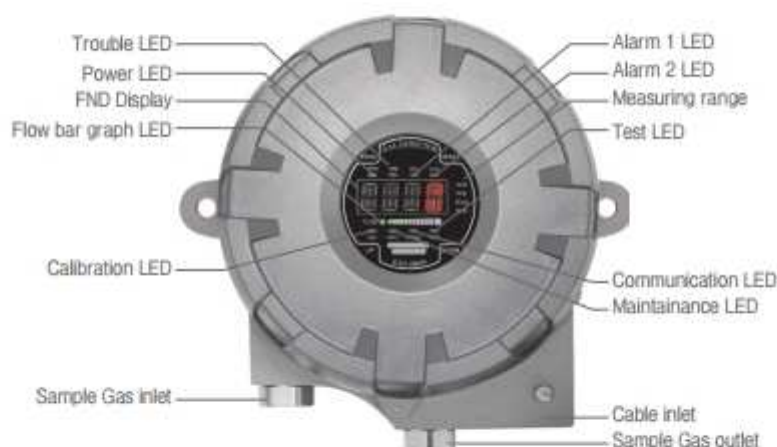
GTD-5000F Ex

Feature

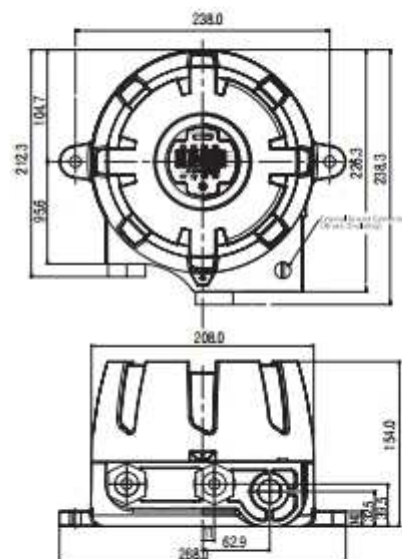
- ▷ Continuous detection of flammable gases in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of VOC gas leakage with a high efficient pump inside
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication(Optional)
- ▷ 3-wire connection for signal & power
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

	EXPLOSION PROOF & SAMPLING-TYPE FLAMMABLE GAS DETECTOR		
Model	GTD-5000F Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Auto Sampling type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	< 15sec / 90% scale		
Accuracy	±3% / Full Scale		
Parameter control	Front switch (calibration, maintenance, alarm setting)		
Operation mode display	Alarm / Trouble LED, Flow rate		
Measuring value display	FND Display(4-Digit)		
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)		
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)		
Sampling method	Diaphragm Pump		
Sampling line	OD 1/4" (Standard)		
Flow rate	0 ~ 2000 ml/min max		
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) / 1000m max 4 ~ 20mA DC Signal : 2000m RS-485 Modbus Signal : 1000m		
Conduit connection	M20 x 1.5P, M25x1.5P, NPT 1/2", NPT 3/4"		
Mounting type	Wall mount		
Operating temperature	-20℃ ~ +60℃		
Operating humidity	5 to 99% RH (Non-condensing)		
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 150mA max		
Material	ALDC		
Dimensions	226.3(W) × 154(H) × 238(D) mm		
Weight	5kg		
Approval	(Exd 11b + H ₂) ATEX/IECEx, NEPSI, CE, KFI, KC,KCs		

Intelligent Flammable Gas Detector

GTD-3000Ex

Feature

- ▷ Continuous detection of flammable gases in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Built-in back light LCD or OLED display
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication(Optional)
- ▷ With the alarm unit
 - Normal : Green LED
 - Alarm : Red LED, Buzzer(95 dB)
 - Trouble : Yellow LED
- ▷ Calibration and maintenance by one-man

Special Application



Remote type

Alarm Beacon Type
(Alarm device)

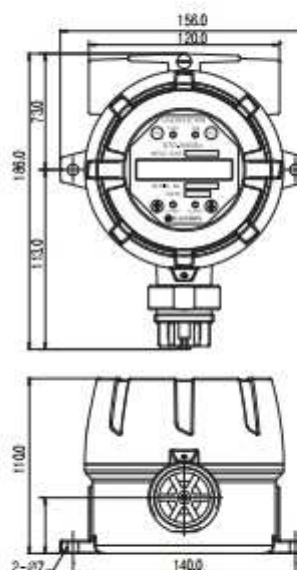
Insert type



General



Dimension (Unit:mm)



Accessories



Specification

*Specifications are subject to be changed without prior notice.

INTELLIGENT & LOCAL DISPLAY TYPE FLAMMABLE GAS DETECTOR			
Model	GTD-3000Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Diffusion type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	< 15sec / 90% scale		
Accuracy	±3% / Full scale		
Parameter control	Non intrusive control with a Magnet (calibration, maintenance, alarm setting)		
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)		
Measuring value display	LCD display (Built in back light 2-Line, 16 characters) / OLED Type (Option)		
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)		
Output signal	Analog : Measuring signal : 4~20mA DC		
	Maintenance signal : 3mA DC		
	Calibration signal : 3mA DC		
	Fault signal : 0mA DC		
	Digital : RS-485 Modbus(Optional)		
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max.		
	RS-485 data communication cable : 1 pair (UL2919 RS-485) / 1000m max		
Conduit connection	M20 x 1.5P, M25x1.5P, NPT 1/2", NPT 3/4"		
Mounting type	2" Pole mount, Wall mount, Duct mount		
Operating temperature	-20℃ ~ +60℃		
Operating humidity	5 ~ 99%RH (non-condensing)		
Operating power	18 ~ 31V DC (24V DC normal) / 250mA		
Dimensions	156 x 186 x 110 (W x H x D)mm		
Weight	1.8kg		
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs		
	Explosion proof type (Ex d IIC T5 Gb) NEPSI		
	CE (EN 50270:2006)		

Smart Diffusion Flammable Gas Detector

GTD-2000Ex

Feature

- ▷ Continuous detection of flammable gases in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Built-in back light LCD or OLED display
- ▷ Easy Configuration of monitoring by HART communication
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-20mA DC output signal
- ▷ With the alarm unit
 - Normal : Green LED
 - Alarm : Red LED, Buzzer(95 dB)
 - Trouble : Yellow LED
- ▷ Calibration and maintenance by one-man

Special Application



Remote type



Insert type

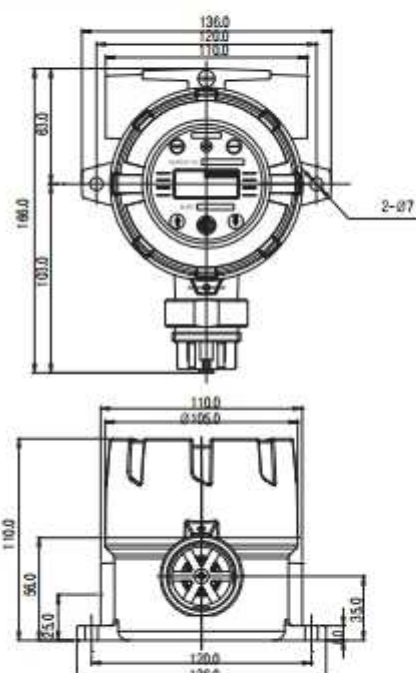
Alarm Beacon Type
(Alarm device)

SIL2

IEC 61508
Safety Integrity Level
HART
COMMUNICATION PROTOCOL


General

Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

SMART & LOCAL DISPLAY TYPE FLAMMABLE GAS DETECTOR			
Model	GTD-2000Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Diffusion type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	< 15 sec / 90% scale		
Accuracy	±3% / Full scale		
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance)		
Operation mode display	1-LED (Power)		
Measuring value display	LCD display (Built in back light 2-Line, 8 characters) / OLED Type (Option)		
Output signal	Analog : Measuring signal : 4~20mA DC Maintenance signal : 3mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : 2mA (HART 7, HART Device Description Language available, Option)		
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max		
Material	Housing : ALDC, SUS316(Option) / Sensor : SUS316		
Conduit connection	G. Rc: NPT 1/2", 3/4" & M20 (G 3/4" : standard)		
Mounting type	2" Pole mount, Wall mount, Duct mount		
Operating temperature	-20°C ~ +60°C / -40°C ~ +80°C (Option)		
Operating humidity	5 ~ 99% RH (non-condensing)		
Operating power	18~31VDC(24VDCnominal) / 200mA max		
Dimensions	136x166x110 (WxHxD)mm		
Weight	1.5kg		
Approval	Explosion proof type (Ex d IIC T5) KCs / IP66/67 Explosion proof type (Ex d IIC Gb T4~T6) ATEX, IECEx Explosion proof type (Ex d IIC T5 Gb) NEPSI Explosion type (Exd IIC T6,T5,T4 Gb)KCs Marine : KR, MED, ABS, DNV KFI, CE, HART, SIL 2, KC		

Transmitter Diffusion Flammable Gas Detector

GTD-1000Ex

Special Application

Feature

- ▷ Continuous detection of flammable gases in explosion hazardous area with flame proof structure
- ▷ Detection gases from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ High quality and low cost of ownership
- ▷ Simple structure and compact design
- ▷ 4-20mA DC output signal
- ▷ Easy calibration & maintenance with inside FND display
- ▷ Calibration and maintenance by one-man



Remote type



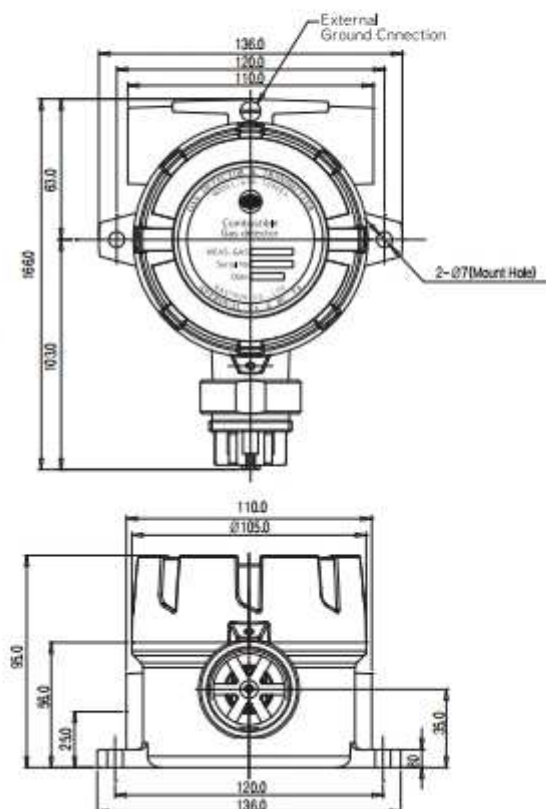
Insert type



General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

	TRANSMITTER TYPE FLAMMABLE GAS DETECTOR		
Model	GTD-1000Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Diffusion type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	<15 sec / 90% scale		
Accuracy	±3% / Full scale		
Output signal	4~20mA DC		
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max		
Conduit connection	G. Rc. NPT 1/2" & 3/4" (G 3/4" : standard)		
Mounting type	2" Pole mount, Wall mount, Duct mount		
Operating temperature	-20℃ ~ +60℃		
Operating humidity	5 ~ 99%RH (non-condensing)		
Operating power	21 ~ 27V DC (24V DC normal) / 200mA max		
Dimensions	136 x 165 x 95 (W x H x D)mm		
Weight	1.2kg		
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs KFI, CE		

Sampling Flammable Gas Detector

GTD-5000Ex

Feature

- ▷ Fast response of flammable gases leakage with a high efficient pump inside
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Stable quality and proved detection principle for service life
- ▷ Fine LCD display for showing various information
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication or PoE(Optional)
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 3-wire connection for signal & power
- ▷ Calibration and maintenance by one-man

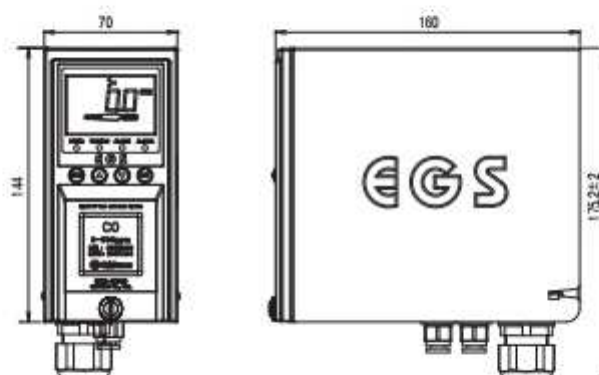


CE

General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

INTELLIGENT & SAMPLING TYPE FLAMMABLE GAS DETECTOR			
Model	GTD-5000Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Buthane & etc)		
Measuring type	Auto Sampling type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	<15 sec / 90% scale		
Accuracy	±3% / Full scale		
Parameter control	Front switch (calibration, maintenance, alarm setting)		
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)		
Measuring value display	LCD Display(4-Digit)		
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)		
Output signal	4 - 20mA DC		
Sampling method	RS-485 Modbus(Optional) / PoE(Power over Ethernet)(Option)		
Sampling line	Diaphragm Pump		
Flow rate	OD 1/4" (Standard)		
Cable/Distance	0 ~ 1000 ml/min max		
Conduit connection	Power + Signal cable : 3-wire > 1.5sq(AWG16) / 2500m max		
Mounting type	RS-485 data communication cable : 1 pair(UL2919 RS-485) / 1000m max		
Operating temperature	PoE(Power over Ethernet) : 100m max		
Operating humidity	Cable gland(PG-16)		
Operating power	Wall mount		
Material	-20℃ ~ +60℃		
Dimensions	5 to 99% RH (Non-condensing)		
Weight	Standard : 18 ~31V DC (24V DC normal) / 280mA max		
Approval	PoE(NOTE 1) : 48V DC ±10% / 200mA max		
NOTE 1	Front(Poly carbonate), Sides(Steel)		
	Standard type : 70(W) × 144(H) × 160(D) mm		
	Standard type : 2.5kg		
	CE (EN50270:1999)		
	DC 24V should be supplied if you want to use Pyrolyzer in case of using PoE power		

Gas Receiver Combination Flammable Gas Detector

GTD-6000Ex

Feature

- ▷ Simple structure, refined design and low cost of ownership
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Detection gas from low to high concentration owing to various detection principle
- ▷ Easy installation with a wall mount type
- ▷ Check it from a distance by large display and flashing light
- ▷ 4-digit gas concentration display
- ▷ 3-stage alarm level, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication(Optional)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis

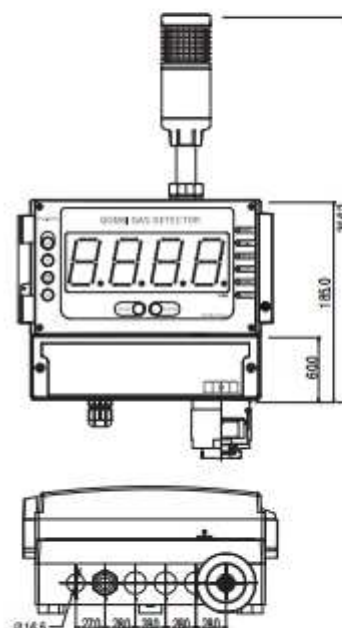


Gas sensor +
Receiver
Combination

CE

General

Dimension (Unit:mm)



Accessories



RS-485 module

Specification

* Specifications are subject to be changed without prior notice.

GAS RECEIVER COMBINATION TYPE GTD-6000Ex			
Model	GTD-6000Ex		
Measuring gas	Flammable gases (LNG, LPG, H ₂ , Methane, Butane & etc)		
Measuring type	Diffusion type		
Measuring method	Catalytic cell	Hot wire semiconductor cell	Thermal conductivity cell
Measuring range	0~100% LEL	0~2000ppm	0~100% Vol
Response time	< 15 sec / 90% scale		
Accuracy	± 3% / Full Range		
Measuring display	1.8" 4-Digit FND		
Operation mode display	6-LED(Power, 3-stage alarm, Trouble, Stand-by for maintenance)		
Alarm signal output	SPDT, Load: AC 250V / 1A (Alarm1, Alarm2, Alarm3, Trouble)		
Alarm display	Visual : 3-stage Alarm, Trouble LED, Warning LED Audible : Buzzer(85dB)		
Output signal	Analog : Measuring signal : 4~20mA DC Maintenance signal : 3mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : RS-485 Modbus (Option)		
Cable	Power + Signal cable : 1.5sq (AWG16) / 2500m max		
Distance	4 ~ 20mA DC Signal : 2000m / RS-485 Modbus Signal : 1000m		
Mounting type	Wall mount		
Operating temperature	-20℃ ~ +60℃		
Operating humidity	5 to 99% RH (Non-condensing)		
Operating power	Standard : AC90V~250V / 12W max Option : 24V DC / 280mA max		
Material	Detector(ABS), Sensor(PVC), Alarm unit(Poly carbonate)		
Dimensions	235.6(W) × 355.5(H) × 109.3(D) mm		
Weight	1.75kg		
Approval	CE (EN50270 : 2006)		

Fixed type Oxygen & Toxic Gas Detector Spec. Comparison

Model	GTD-5100F Tx	GTD-5000F Tx	GTD-3000Tx	GTD-2000Tx	GTD-1000Tx	GTD-5000Tx	GTD-6000Tx
							
Endouse Type	Explosion proof					Non-Explosion proof	
Measuring Method	Suction		Diffusion			Suction	Diffusion
Local Display	FND(4-Digit)		LCD / OLED(Optional)		N/A	LCD	FND(4-Digit)
Analog output	4-20mA						
Digital output(Optional)	RS-485			HART	N/A	RS-485, PoE	RS-485
Alarm Output Relay	2-stage alarm, 1-trouble alarm		N/A			2-stage alarm, 1-trouble alarm	3-stage alarm, 1-trouble alarm
Operation Power	24V DC					24V DC PoE(Optional)	AC90~250V / 24V DC(Optional)
Local Certificate	KCs	KCs, KFI	KCs	N/A			
Oversea Certificate	CE	ATEX, NEPSI, IECEx, CE	NEPSI, CE	ATEX, IECEx, NEPSI, CE, SIL 2	CE		N/A
Classification (Marine)	N/A			MED(O2) ABS(O2, H2S) BV(H2S) DNV(O2, H2S)	N/A		

06

Fixed type Oxygen & Toxic Gas Detector



Flame Proof Type Sampling VOC Gas Detector
GTD-5100F Tx



Flame Proof Type Sampling Oxygen & Toxic Gas Detector
GTD-5000F Tx



Intelligent Diffusion Oxygen & Toxic Gas Detector
GTD-3000Tx



Smart Diffusion Oxygen & Toxic Gas Detector
GTD-2000Tx



Transmitter Diffusion Oxygen & Toxic Gas Detector
GTD-1000Tx



Sampling Oxygen & Toxic Gas Detector
GTD-5000Tx



Gas Receiver Combination Oxygen & Toxic Gas Detector
GTD-6000Tx

Flame Proof Type Sampling VOC Gas Detector

GTD-5100F Tx

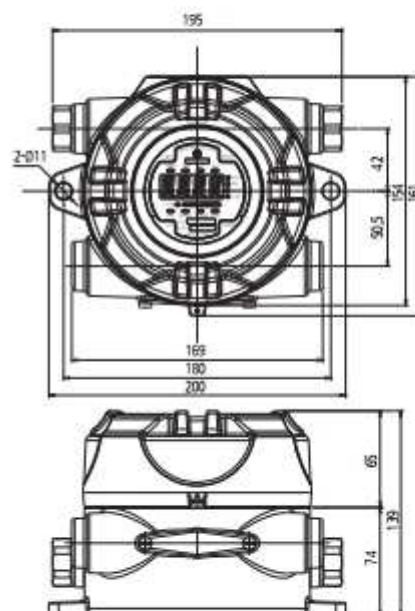
Feature

- ▷ Continuous detection of VOC gas in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of gas leakage with a high efficient pump inside
- ▷ Low concentration VOC gas detection by PID sensor
- ▷ Stable quality and proved detection principle for service life
- ▷ Auto calibration and program setting with magnet bar on FND display board
- ▷ 4-Digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring by RS-485 Modbus (Isolated) Serial data communication (Option)
- ▷ 3-Wire Type
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General

Dimension (Unit:mm)



Accessories



Cable gland



Male connector



Micro Filter



Sensor Cartridge

Specification

※Specifications are subject to be changed without prior notice.

	EXPLOSION PROOF & SAMPLING TYPE OXYGEN & TOXIC GAS DETECTOR
Model	GTD-5100F Tx
Measuring gas	O ₂ / Toxic gases(CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type
Measuring method	Semiconductor cell, Electrochemical cell
measuring	Refer to Toxic Gas Measuring Range
Response time	< 45sec / 90% scale
Accuracy	±3% / Full Scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)
Operation mode display	Alarm / Trouble LED , Flow rate
Measuring value display	FND Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4" (Standard)
Flow rate	0 ~ 1000 ml/min max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) 4 ~ 20mA DC Signal : 2500m RS-485 Modbus Signal : 1000m PoE(Power over Ethernet) : 100m max
Conduit connection	G, R(Rc), NPT 1/2" & 3/4" (G 3/4" : Standard)
Mounting type	Wall mount
Operating temperature	-40℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 600mA max
Material	ALDC
Dimensions	195(w)x139(h)x154(d)mm
Weight	4kg
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs, CE

Flame Proof Type Sampling Oxygen & Toxic Gas Detector

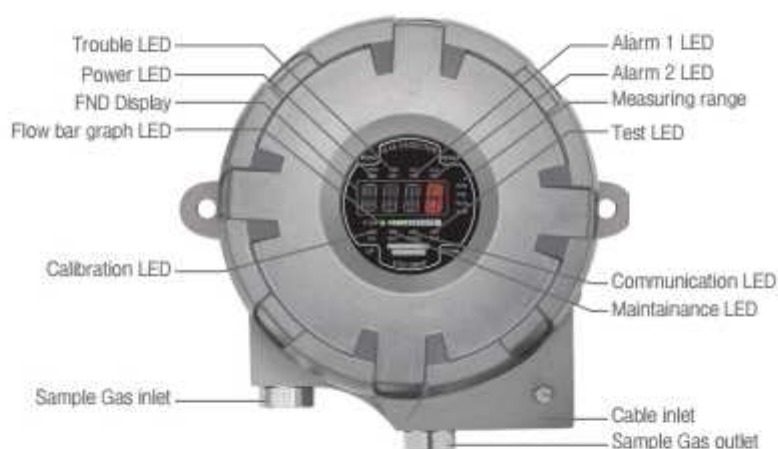
GTD-5000F Tx

Feature

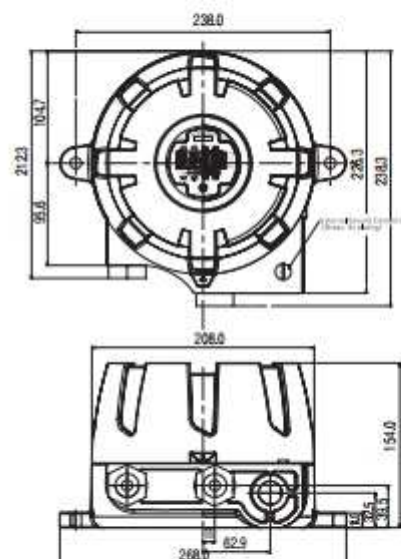
- ▷ Continuous detection of toxic gases and oxygen in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Fast response of VOC gas leakage with a high efficient pump inside
- ▷ Stable quality and proved detection principle for service life
- ▷ Excellent selectivity by adapting detection principle only for toxic gases & oxygen
- ▷ Superior performance for detecting gases below TLV
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication(Optional)
- ▷ 3-Wire Type
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Cable gland



Male connector



Micro Filter



Sensor Cartridge

Specification

※Specifications are subject to be changed without prior notice.

EXPLOSION PROOF & SAMPLING TYPE OXYGEN & TOXIC GAS DETECTOR	
Model	GTD-5000F Tx
Measuring gas	O ₂ / Toxic gases(CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type
Measuring method	Semiconductor cell, Electrochemical cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45sec / 90% scale)
Accuracy	±3% / Full Scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance, alarm setting)
Operation mode display	Alarm / Trouble LED , Flow rate
Measuring value display	FND Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	Analog output : 4~20mA DC Digital output : RS-485 Modbus(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4 "(Standard)
Flow rate	0 ~ 1000 ml/min max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) 4 ~ 20mA DC Signal : 2500m RS-485 Modbus Signal : 1000m
Conduit connection	M20 x 1.5P, M25x1.5P, NPT 1/2" , NPT 3/4"
Mounting type	Wall mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~31V DC (24V DC normal) / 150mA max
Material	ALDC
Dimensions	226.3(W) × 154(H) × 238(D) mm
Weight	5kg
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs Explosion proof type (Exd IIB + H2 T6,T5) ATEX, IECEx, NEPSI, CE, KFI, KC

Intelligent Diffusion Oxygen & Toxic Gas Detector

GTD-3000Tx

Feature

- ▷ Continuous detection of toxic gases and oxygen in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Excellent selectivity by adapting detection principle only for toxic gases & oxygen
- ▷ Stable quality and proved detection principle for service life
- ▷ Built-in back light LCD or OLED display
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication(Optional)
- ▷ With the alarm unit
 - Normal : Green LED
 - Alarm : Red LED, Buzzer(95 dB)
 - Trouble : Yellow LED
- ▷ Calibration and maintenance by one-man

Special Application



Alarm Beacon Type



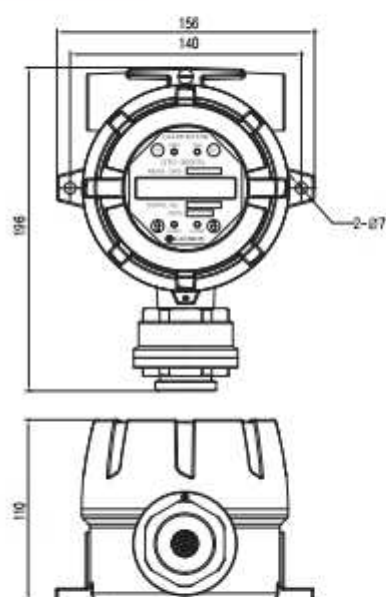
Insert type



General



Dimension (Unit:mm)



Accessories



Specification

* Specifications are subject to be changed without prior notice.

	INTELLIGENT & LOCAL DISPLAY TYPE OXYGEN & TOXIC GAS DETECTOR
Model	GTD-3000Tx
Measuring gas	O ₂ / Toxic gases (CO, CL ₂ , NH ₃ & etc)
Measuring type	Diffusion type
Measuring method	Electrochemical cell, Semiconductor cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45 sec / 90% scale
Accuracy	±3% / Full scale
Parameter control	Non intrusive control with a Magnet (calibration, maintenance, alarm setting)
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)
Measuring value display	LCD display (Built in back light 2-Line, 16 characters) / OLED Type (Option)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	Analog : Measuring signal : 4-20mA DC Maintenance signal : 3mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : RS-485 Modbus (Option)
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max RS-485 data communication cable : 1 pair (UL2919 RS-485) / 1000m max
Conduit connection	G. Rc. NPT 1/2" & 3/4" (G 3/4" : standard)
Mounting type	2" Pole mount, Wall mount, Duct mount
Operating temperature	-20°C ~ +60°C
Operating humidity	5 ~ 99% RH (non-condensing)
Operating power	18 ~ 31V DC (24V DC normal) / 200mA
Dimensions	156 x 196 x 110 (W x H x D)mm
Weight	2.0kg
Approval	Explosion proof type (Ex d IIC T6, IP65) KCs Explosion proof type (Ex d IIC T6 Gb) NEPSI CE (EN 50270:2006) KC

Smart Diffusion Oxygen & Toxic Gas Detector

GTD-2000Tx

Feature

- ▷ Continuous detection of toxic gases and oxygen in explosion hazardous area with flame proof structure
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Excellent selectivity by adapting detection principle only for toxic gases & oxygen
- ▷ Superior performance for detecting toxic gases below TLV
- ▷ Multi functions and high quality with low cost of ownership
- ▷ Built-in back light LCD or OLED display
- ▷ Easy configuration of monitoring system by HART communication
- ▷ Auto calibration and program setting with a magnet bar
- ▷ 4-20mA DC output signal
- ▷ With the alarm unit
 - Normal - Green LED
 - Alarm - Red LED, Buzzer(95 dB)
 - Trouble - Yellow LED
- ▷ Calibration and maintenance by one-man

Special Application



Alarm Beacon Type



Insert type



SIL2

IEC 61508
Safety Integrity Level

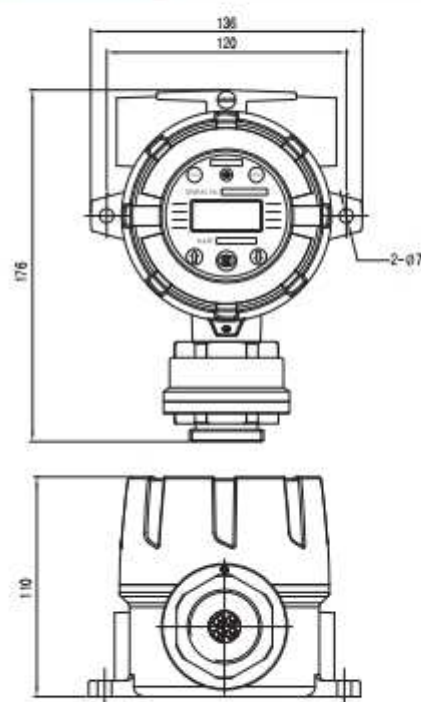
HART
COMMUNICATION PROTOCOL



General



Dimension (Unit:mm)



Accessories



Specification

※Specifications are subject to be changed without prior notice.

SMART & LOCAL DISPLAY TYPE OXYGEN & TOXIC GAS DETECTOR	
Model	GTD-2000Tx
Measuring gas	O ₂ / Toxic gases (CO, CL ₂ , NH ₃ & etc)
Measuring type	Diffusion type
Measuring method	Electrochemical cell, Semiconductor cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45 sec / 90% scale
Accuracy	±3% / Full scale
Parameter control	Non intrusive control with a Magnet bar (calibration, maintenance)
Operation mode display	1-LED (Power)
Measuring value display	LCD display (Built in back light 2-Line, 8 characters) / OLED Type (Option)
Output signal	Analog : Measuring signal : 4~20mA DC Maintenance signal : 3mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : 2mA (HART 7, HART Device Description Language available, Option)
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max.
Material	Housing : ALDC, SUS316(Optional) / Sensor : SUS316
Conduit connection	G. Rc. NPT 1/2", 3/4" & M20 (G 3/4" : standard)
Mounting type	2" Pole mount, Wall mount, Duct mount
Operating temperature	-20℃ ~ +60℃ / -40℃ ~ +80℃ (Option)
Operating humidity	5 ~ 99%RH (non-condensing)
Operating power	18~31V DC (24V DC normal) / 200mA max
Dimensions	136 x 176 x 110 (WxHxD)mm
Weight	1.7kg
Approval	Explosion proof type (Ex d IIC T6) KCs / IP66/67 Explosion proof type (Ex d IIC Gb T4~T6) ATEX, IECEx Explosion proof type (Ex d IIC T6 Gb) NEPSI Marine : KR, MED, ABS, BV, DNV HART, SIL 2, UL, KC, CE

Transmitter Diffusion Oxygen & Toxic Gas Detector

GTD-1000Tx

Feature

- ▷ Continuous detection of toxic gases and oxygen in explosion hazardous area with flame proof structure
- ▷ Excellent selectivity by adapting detection principle only for toxic gases & oxygen
- ▷ Superior performance for detecting toxic gases below TLV
- ▷ High quality and low cost of ownership
- ▷ 4-20mA DC output signal
- ▷ Simple structure and compact design
- ▷ Easy calibration & maintenance with inside FND display
- ▷ Calibration and maintenance by one-man

Special Application

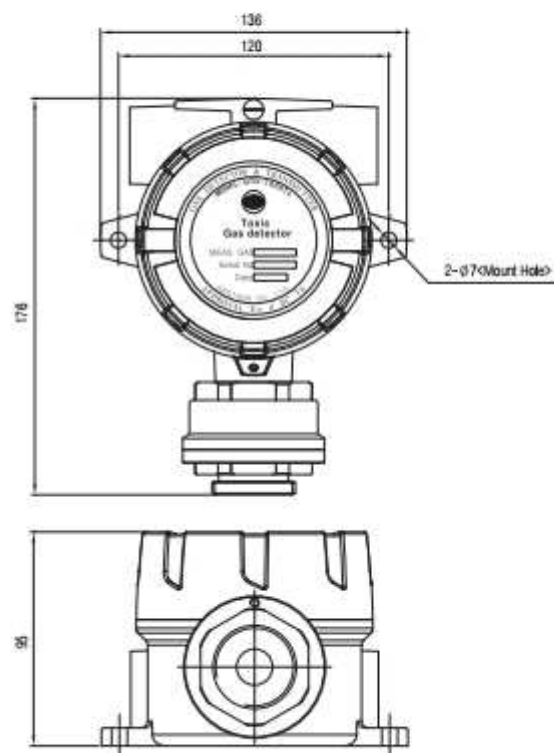


Insert type



General

Dimension (Unit:mm)



Accessories



Cable gland



Splash guard



Rain cover



Collecting-cone

Specification

*Specifications are subject to be changed without prior notice.

	TRANSMITTER TYPE OXYGEN & TOXIC GAS DETECTOR
Model	GTD-1000Tx
Measuring gas	O ₂ / Toxic gases (CO, CL ₂ , NH ₃ & etc)
Measuring type	Diffusion type
Measuring method	Electrochemical cell, Semiconductor cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45 sec / 90% scale
Accuracy	±3% / Full scale
Output signal	4~20mA DC
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq (AWG16) / 2500m max Power + Signal cable : 2-wire >1.5sq (AWG16) / 2500m max
Conduit connection	G. Rc. NPT 1/2" & 3/4" (G 3/4" : standard)
Mounting type	2" Pole mount, Wall mount, Duct mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 ~ 99%RH (non-condensing)
Operating power	18 ~ 31V DC (24V DC normal) / 150mA max
Dimensions	136 x 176 x 95 (W x H x D)mm
Weight	1.4kg
Approval	Explosion proof type (Ex d IIC T6, IP66/67) KCs, CE, KC

Sampling Oxygen & Toxic Gas Detector

GTD-5000Tx

Feature

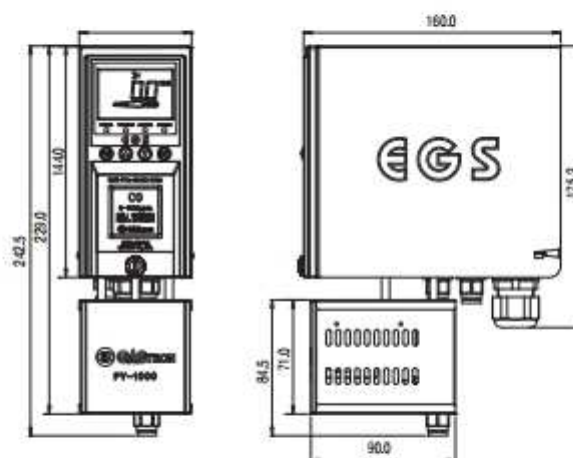
- ▷ Fast response of toxic gases & oxygen leakage with a high efficient pump inside
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Easy replacement with a cartridge type sensor
- ▷ Digital flow sensor to maintain regular flow rate
- ▷ Stable quality and proved detection principle for service life
- ▷ Superior performance for detecting toxic gases below TLV
- ▷ Fine LCD display for showing various information
- ▷ 4-digit digital gas concentration display
- ▷ 4-20mA DC output signal
- ▷ Easy configuration of monitoring system by RS-485 Modbus isolated serial data communication or PoE(Optional)
- ▷ 2-stage alarm, 1-trouble display and relay contact output
- ▷ 3-Wire Type
- ▷ Calibration and maintenance by one-man



General



Dimension (Unit:mm)



Accessories



Specification

*Specifications are subject to be changed without prior notice.

	INTELLIGENT & SAMPLING TYPE OXYGEN & TOXIC GAS DETECTOR
Model	GTD-5000Tx
Measuring gas	O ₂ / Toxic gases(CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type
Measuring method	Semiconductor cell, Electrochemical cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45sec / 90% scale)
Accuracy	±3% / Full scale
Parameter control	Front switch (calibration, maintenance, alarm setting)
Operation mode display	4-LED (Power, 2-stage alarm, 1-trouble)
Measuring value display	LCD Display(4-Digit)
Alarm signal output	250V 1A / 3-SPST relay contact (2-stage alarm, 1-trouble)
Output signal	4 ~ 20mA DC RS-485 Modbus(Optional) / PoE(Power over Ethernet)(Optional)
Sampling method	Diaphragm Pump
Sampling line	OD 1/4" (Standard)
Flow rate	0 ~ 1000 ml/min max
Cable/Distance	Power + Signal cable : 3-wire > 1.5sq(AWG16) / 1000m max / Pyrolyzer 500m max RS-485 data communication cable : 1 pair(UL2919 RS-485) / 1000m max PoE(Power over Ethernet) : 100m max Pyrolyzer Type : 500m max
Conduit connection	Cable gland(PG-16)
Mounting type	Wall mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : 18 ~ 31V DC (24V DC normal) / 280mA max Pyrolyzer(NOTE1) : 18 ~ 31V DC (24V DC normal) / 520mA max PoE(NOTE2) : 48V DC ± 10% / 200mA max
Material	Front(Poly carbonate), Sides(Steel)
Dimensions	Standard type : 70(W) × 144(H) × 160(D) mm Pyrolyzer type(PY-1000) : 70(W) × 242.5(H) × 160(D) mm
Weight	Standard type : 2.5kg GTD-5000 & PY-1000 : 4.05kg
Approval	CE (EN50270:1999)
NOTE 1	Current consumed by Pyrolyzer(PY1000, PY2000) Unit
NOTE 2	DC 24V should be supplied if you want to use Pyrolyzer in case of using PoE power

Gas Receiver Combination Oxygen & Toxic Gas Detector

GTD-6000Tx

Feature

- ▷ Simple structure, refined design and low cost of ownership
- ▷ Self diagnosis function with built-in Microprocessor
- ▷ Superior performance for detecting toxic gases below TLV
- ▷ Easy installation with a wall mount type
- ▷ 4-digit gas concentration display
- ▷ 3-stage alarm level, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring by RS-485 Modbus isolated serial data communication(Optional)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis



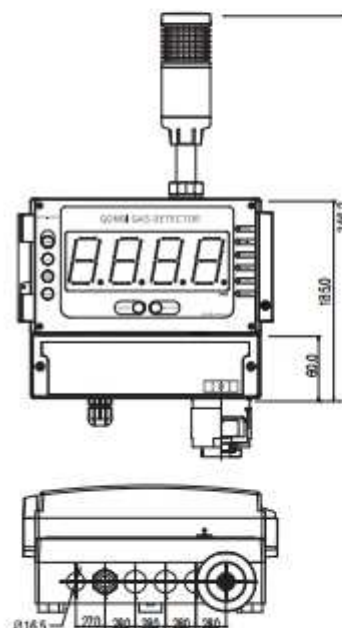
Gas sensor
+ Receiver
Combination

CE

General



Dimension (Unit:mm)



Accessories



RS-485 module

Specification

*Specifications are subject to be changed without prior notice.

GAS RECEIVER COMBINATION TYPE GTD-6000Tx	
Model	GTD-6000Tx
Measuring gas	O ₂ Toxic gases (CO, Cl ₂ , NH ₃ & etc)
Measuring type	Diffusion type
Measuring method	Electro-Chemical Cell, Semiconductor cell
Measuring range	Refer to Toxic Gas Measuring Range(166 page)
Response time	< 45sec / 90% scale
Accuracy	±3% / Full Range
Measuring display	1.8" 4-Digit FND
Operation mode display	6-LED(Power, 3-stage alarm, Trouble, Stand-by for maintenance)
Alarm signal output	SPDT, Load: AC 250V / 1A (Alarm1, Alarm2, Alarm3, Trouble)
Alarm display	Visual : 3-stage Alarm, Trouble LED, Warning LED Audible : Buzzer(85dB)
Output signal	Analog : Measuring signal : 4~20mA DC Maintenance signal : 3mA DC Calibration signal : 3mA DC Fault signal : 0mA DC Digital : RS-485 Modbus (Option)
Cable	Power + Signal cable : 1.5sq (AWG16) / 2500m max
Distance	4 ~ 20mA DC Signal : 2000m / RS-485 Modbus Signal : 1000m
Mounting type	Wall mount
Operating temperature	-20℃ ~ +60℃
Operating humidity	5 to 99% RH (Non-condensing)
Operating power	Standard : AC90V~250V / 12W max Option : 24V DC / 280mA max
Material	Detector(ABS), Sensor(PVC), Alarm unit(Poly carbonate)
Dimensions	235.6(W) × 355.5(H) × 109.3(D) mm
Weight	1.75kg
APPROVAL	CE(EN 50270 : 2006)

Gas Detector Receiver Spec. Comparison

Model	GTC-200A	GTC-200F	GTC-540	GTC-520F	GTC-700	GMS-2000
						
CHANNEL NO.	1~64	1~4	1		1~64	1~260
Enclosure Type	Non-Explosion proof	Explosion proof	Non-Explosion proof	Explosion proof	Non-Explosion proof	
Analog output	4-20mA					
Digital output(Optional)	RS-485					
Alarm Output Relay	3-stage alarm, 1-trouble alarm				N/A	RS-422,485, Ethernet 2 Port
Operation Power	AC 110/220V / 24V DC(Optional)		AC90V~250V / 24V DC(Optional)		24VDC	AC 110/220V
Local Certificate	KFI	KCs	N/A	KCs	N/A	KFI
Oversea Certificate	CE	N/A	CE	N/A	CE	CCCF
Classification(Marine)	KR	N/A				

07 Gas Detector Receiver



Multi Channel Gas Detector Receiver
GTC-200A



4-Channel Flame Proof Type Gas Detector Receiver
GTC-200F



Single Channel Gas Detector Receiver
GTC-520 / 540 / 550



Single Channel Flame Proof Type Gas Detector Receiver
GTC-520F



Analogue Mux Controller (8 Slot)
GTC-700



Gas Monitoring System
GMS-2000

Multi Channel Gas Detector Receiver

GTC-200A Series

Feature

- ▷ Integrated type receiver with built-in Microprocessor
- ▷ Connectable with various types of gas detectors
- ▷ Easy expansion with using a global standard DIN type case
- ▷ Available various receiver type (Wall Mount, Panel Mount and 19" Rack Type)
- ▷ Gas concentration display with 4-digit & Bar-graph (32 segment, 3-color LED)
- ▷ 3-color display according to alarm stages (Green, Yellow, Red)
- ▷ 3-stage alarm, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring system with RS-485 Modbus isolated serial data communication(Optional)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis
- ▷ Back-up power unit (Option)

General



Common unit

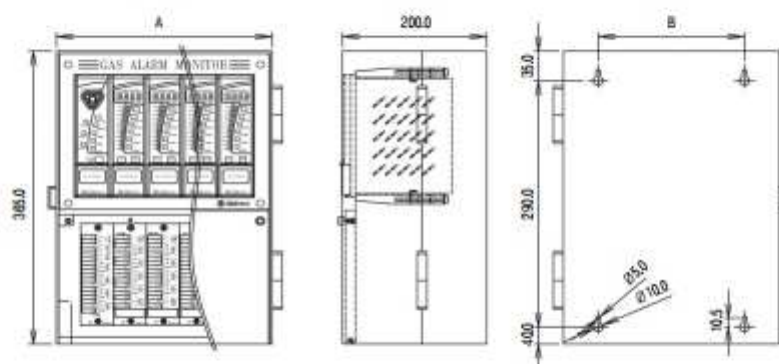


Channel unit



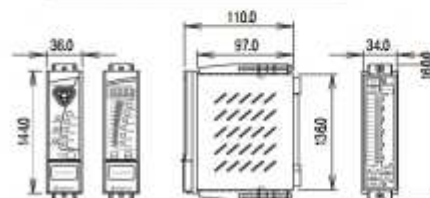
Dimension (Unit:mm)

GTC-200A WALL MOUNT



CHANNEL	A(mm)	B(mm)	CHANNEL	A(mm)	B(mm)
4 CHANNEL	217	147	8 CHANNEL	361	291
6 CHANNEL	289	219	10 CHANNEL	433	363

GTC-200A CARD UNITS



GTC-200A PANEL MOUNT



PANEL CUTTING DIMENSION CALCULATION	
C = (No. of Channel Card + 1) x 36	
D = C - 1	

Accessories



19" Rack type



Back-up power unit



RS-485 module

Specification

*Specifications are subject to be changed without prior notice.

MULTI-CHANNEL TYPE GAS DETECTOR RECEIVER GTC-200A SERIES		
Model	GTC-200A COMMON (ALARM UNIT)	GTC-200A CHANNEL (DENSITY INDICATING UNIT)
Operation display	8-LED (Power, 3-stage alarm, Trouble, Buzzer stop, PC & channel data communication)	6-LED (Power, 3-stage alarm, Trouble Stand-by for maintenance)
Measuring display		4-Digit FND & Bar-graph (32 segment, 3-color LED)
Measuring range		1~9999 (programmable)(%LEL, ppm, % Vol)
Alarm display	Visual : 3-stage alarm, Trouble LED Audible : buzzer	Visual : 3-stage alarm, Trouble LED
Alarm output signal	3-stage alarm, Trouble, Buzzer AC250V 5A relay contact (SPDT)	3-stage alarm, Trouble, Buzzer AC250V 5A relay contact (SPDT)
Alarm level set		Programmable within detection range
Input signal		4~20mA DC (2-wire or 3-wire)
Output signal	Isolated RS-485 Communication Modbus (option)	4~20mA DC
Reset signal	Reset switch and remote control	Reset switch
Program set mode		Alarm value (1, 2, 3 alarm)
		Alarm time (Instant & delay) 1~30min
		Alarm dead band
		Relay output on/off
Operating temperature	-20°C ~ +60°C	
Operating humidity	5 ~ 99% RH (non-condensing)	
Operating power	Single channel card : 18~31V DC (24V DC normal) / 100mA max Wall Mount Type : AC 110 / 220V	
Battery power	Back-Up, power unit (option) 24V DC / 600mAh, 1300mAh (option)	
Approval	CE, KR, KFI	

4-Channel Flame Proof Type Gas Detector Receiver

GTC-200F Series

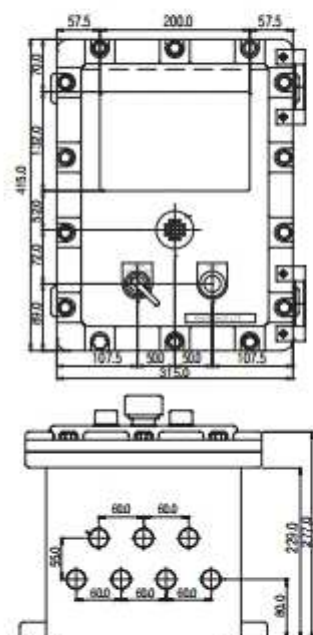
Feature

- ▷ Usable in explosion hazardous area with flame proof structure
- ▷ Integrated type receiver with built-in Microprocessor
- ▷ Connectable with various types of gas detectors
- ▷ Gas concentration display with 4-digit & Bar-graph (32 segment, 3-color LED)
- ▷ 3-color display according to alarm stages (Green, Yellow, Red)
- ▷ 3-stage alarm, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring system with RS-485 Modbus isolated serial data communication (Option)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis
- ▷ Back-up power unit (Option)



General

Dimension (Unit:mm)



Accessories



RS-485 module

Specification

* Specifications are subject to be changed without prior notice.

EXPLOSION PROOF TYPE GAS DETECTOR RECEIVER GTC-200F SERIES		
Model	GTC-200A COMMON (ALARM UNIT)	GTC-200A CHANNEL (DENSITY INDICATING UNIT)
Operation display	8-LED (Power, 3-stage alarm, Trouble, Buzzer stop, PC & channel data communication)	6-LED (Power, 3-stage alarm, Trouble Stand-by for maintenance)
Measuring display		4-Digit FND & Bar-graph (32 segment, 3-color LED)
Measuring range		1~9999 (programmable)(%LEL, ppm, % Vol)
Alarm display	Visual : 3-stage alarm, Trouble LED Audible : buzzer	Visual : 3-stage alarm, Trouble LED
Alarm output signal	3-stage alarm, Trouble, Buzzer AC250V 5A relay contact (SPDT)	3-stage alarm, Trouble, Buzzer AC250V 5A relay contact (SPDT)
Alarm level set		Programmable within detection range
Input signal		4~20mA DC (2-wire or 3-wire)
Output signal	Isolated RS-485 Communication Modbus (option)	4~20mA DC
Reset signal	Reset switch and remote control	Reset switch
Program set mode		Alarm value (1, 2, 3 alarm) Alarm time (Instant & delay) 1~30min Alarm dead band Relay output on/off
Operating temperature	-20℃ ~ +40℃	
Operating humidity	5 ~ 99% RH (non-condensing)	
Operating power	Single channel card : 18~31V DC (24V DC normal) / 100mA max Wall Mount Type : AC 110 / 220V	
Battery power	Back-Up power unit (option) 24V DC / 600mA, 1300mA (option)	
Approval	Explosion proof type (Ex d IIB T5) KCs	

Single Channel Gas Detector Receiver

GTC-520 / 540 / 550 Series

Feature

- ▷ Simple structure, refined design and low cost of ownership
- ▷ Connectable with various types of gas detectors
- ▷ Easy installation with a wall mount type
- ▷ Gas concentration display with 3-digit, 4-digit, or Bar-graph (32 segment, 3-color LED)
- ▷ 3-color display according to alarm stages (Green, Yellow, Red)
- ▷ 3-stage alarm, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring system with RS-485 Modbus isolated serial data communication (Option)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis
- ▷ IP65 housing case for water-resistant and tight function

Special Application



GTC-540A



GTC-550

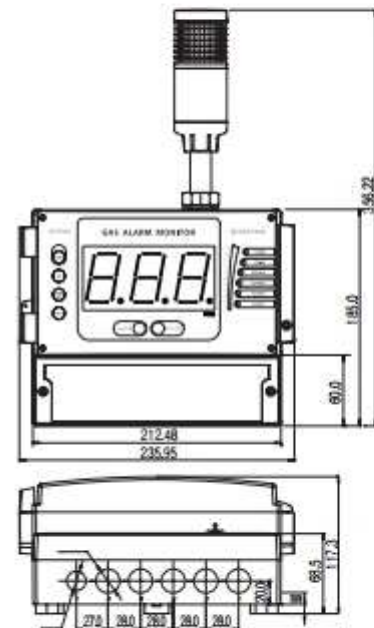


GTC-520A



General

Dimension (Unit:mm)



Accessories



RS-485 Communication Module

Specification

*Specifications are subject to be changed without prior notice.

	SINGLE-CHANNEL TYPE GAS DETECTOR RECEIVER GTC-540 SERIES		
Model	GTC-520	GTC-540	GTC-550
Operation display	6-LED(Power, 3-stage alarm, Trouble, Stand-by for maintenance)		
Measuring display	4-Digit 0.315" FND	3-Digit 1.8" FND	3-Digit 3" FND
Measuring range	Bar-Graph(32 Segment, 3-color LED) 1~999 (programmable) / %LEL, ppm, %vol		
Alarm display	Visual : 3-stage alarm, Trouble LED, Warning Light Audible : buzzer		
Alarm output signal	3-Stage Alarm, Trouble/ AC250V 3A relay contact (SPDT) Shut-off Valve control signal (DC 12V)		
Alarm level set	Programmable with in detection range		
Input signal	4~20mA DC(2-wire or 3-wire)		
Output signal	4~20mA DC Isolated RS-485 Communication Modbus (option)		
Reset signal	Reset switch and remote control Alarm value (1,2,3 alarm) Alarm time (Instant & delay) 1~30min Alarm dead band Measuring value offset (SAD) Relay output on/off		
Operating temperature	-20℃ ~ +60℃		
Operating humidity	5~99% RH(non-condensing)		
Operating power	Standard : AC90V~250V / 10W max 24V DC (Option) / 200mA max	Standard : AC90V~250V / 12W max 24V DC (Option) / 280mA max	Standard : AC90V~250V / 15W max 24V DC (Option) / 300mA max
Dimensions	135x105x81 (WxHxD)mm	235.6x185x117.3 (WxHxD)mm	280x389x153 (WxHxD)mm
Weight	580g	1kg	2kg
APPROVAL	CE		

Single Channel Flame Proof Type Gas Detector Receiver

GTC-520F Series

Feature

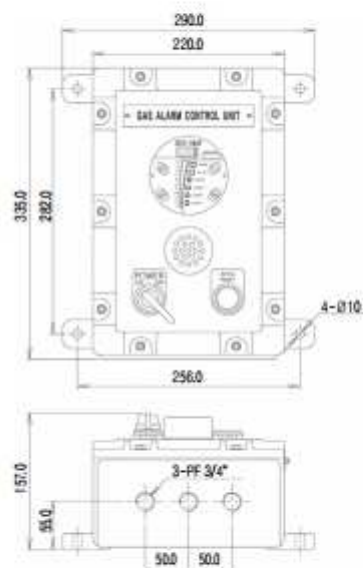
- ▷ Usable in explosion hazardous area with flame proof structure
- ▷ Connectable with various types of gas detectors
- ▷ Easy installation with a wall mount type
- ▷ Gas concentration display with 4-digit & Bar-graph (32 segment, 3-color LED)
- ▷ 3-color display according to alarm stages (Green, Yellow, Red)
- ▷ 3-stage alarm, 1-trouble LED display and relay contact output
- ▷ Easy configuration of monitoring system with RS-485 Modbus isolated serial data communication(Optional)
- ▷ Programmable alarm setting (Level, Time delay)
- ▷ Peak hold
- ▷ Self diagnosis



General



Dimension (Unit:mm)



Accessories



RS-485 Communication Module



Cable gland

Specification

※ Specifications are subject to be changed without prior notice.

EXPLOSION PROOF TYPE TYPE GAS DETECTOR RECEIVER GTC-520F SERIES	
Model	GTC-520F
Operation display	6-LED (Power, 3-stage alarm, Trouble, Stand-by)
Measuring display	4-Digit FND & Bar-graph
Measuring range	1~9999(programmable) / %LEL, ppm, %Vol
Alarm display	Visual 3-stage alarm, Trouble LED Audible : buzzer
Alarm output signal	3-Stage Alarm, Trouble / AC250V 5A relay contact (SPDT) Shut-off valve control signal (DC 12V)
Alarm level set	Programmable within detection range
Input signal	4~20mA DC (2-wire or 3-wire)
Output signal	4~20mA DC
Reset signal	RS-485 Communication Modbus(option) Reset switch and remote control
Program set mode	Alarm value (1, 2, 3 alarm) Alarm time (Instant & delay) 1~30min Alarm dead band Relay output on/off
Operating temperature	-20°C ~ +60°C
Operating humidity	5~99%RH(non-condensing)
Operating power	Standard : AC90V~250V / 12W max 24V DC (Option) / 280mA max
Dimensions	290x347x137 (WxHxD)mm
Weight	12kg
Approval	Explosion proof type (Ex d IIB+H2 T6 IP65) KCs

Analogue Mux Controller (8 Slot)

GTC-700 Series

Feature

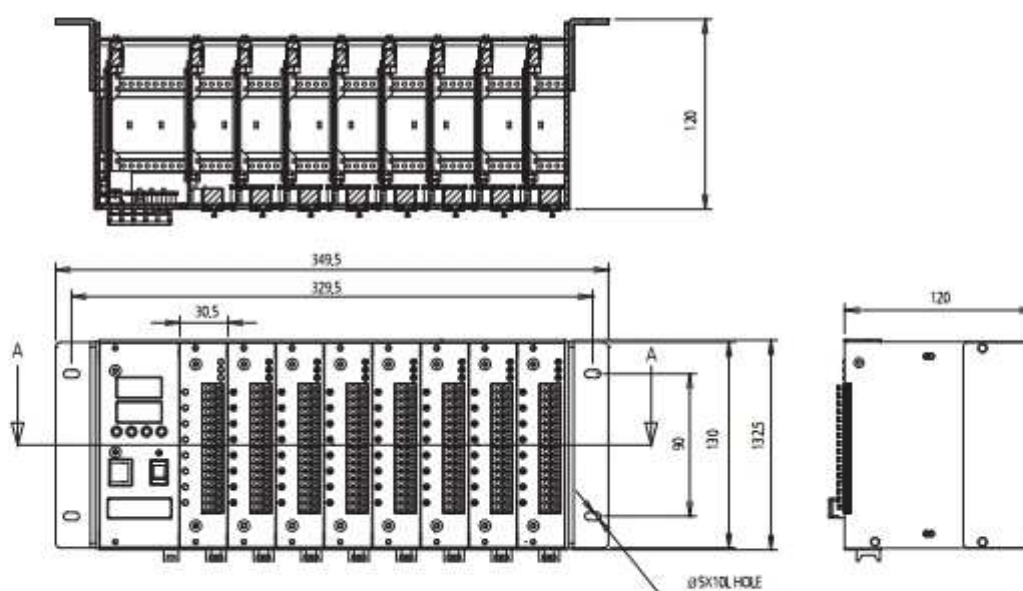
- ▷ Microprocessor applied for central system
- ▷ Easy monitoring system configuration with Isolated RS-485 & Ethernet communication
- ▷ Remote interface, channel calibration, data check, device setting is possible using the common unit
- ▷ 1 set of controller can configure 64 detectors (8 channel / slot)
- ▷ Controller can be expanded (up to 32 sets)
- ▷ Detected value can be displayed in 10uA unit
- ▷ Compensation possible on the difference made due to wiring path
- ▷ High-definition 16-BIT A/D Converter applied
- ▷ Fast scan of input value (0.32 sec / 64 channels)
- ▷ Isolated Analog Input Port



General



Dimension (Unit:mm)



Specification

※ Specifications are subject to be changed without prior notice.

ANALOG MUX CONTROLLER (8 SLOT)		
UNIT	COMMON	ANALOG
CPU/MCU	32bit RISC/ARM Cortex®-M4	8bit RISC/AVR
Display	4-Digit Seven Segment + 2	Power & Error & Communication status LED
Menu Control	Push Button(Func/Up/Down/Reset)	
Interface	Isolated RS-485 & TCP/IP	RS-485 Modbus RTU Slave,
Input range		0~20mA
Channel Accuracy		Full scale $\pm 2.5\%$ (Before Calibration)
Output signal		DC18V~31V(Normal 24V)
Operating power		8.64W @24VDC (normal)
Operating temperature		0° C to +55° C
Operating humidity		5~99% RH(non-condensing)
Mounting Type		Rack & Wall
Dimensions		349.5(W) x 132.5(H) x 120(D) mm
Weight		2.72Kg
Approval		CE

Gas Monitoring System

GMS-2000

Feature

- ▷ Integrated management of all gas detectors with one graphic
- ▷ Easy configuration with low cost by serial data communication (RS-422 or RS-485 Modbus)
- ▷ Easy output configuration on alarm (by group or single)
- ▷ Display switch to a trouble point screen when alarm is occurred
- ▷ Possible to check logged alarm history
- ▷ Real time logging data
- ▷ Easy expansion by serial port
- ▷ Ethernet applicable



Touch screen display



Gas detectors location



Screen shot on alarm



Display of gas density and alarm condition



Bar graph display of gas density



Trend of density history



Alarm report

General

Dimension (Unit:mm)



Specification

※ Specifications are subject to be changed without prior notice.

	GAS LEAK MONITORING PANEL
Model	GMS-2000
Measuring gas	Flammable gases & Toxic gases
Measuring range	0~100%LEL OR 9999 PPM
Alarm level set	Programmable within detection range
Normal display	Green lamp on
Trouble display	Red lamp on (Touch Screen) & buzzer, External red lamp on
Hi alarm display	Yellow lamp on (Touch screen) & buzzer, External yellow lamp on
HiHi alarm display	Yellow lamp on (Touch screen) & buzzer, External yellow lamp on
Input/Output signal	Input : RS-422/485 13 Port Output : RS-422, 485, Ethernet 2 Port Speed : 1200, 2400, 4800, 9600, 19200 bps
Relay contact	Trouble, Hi/HiHi alarm : Relay dry contact (Option)
Operating temperature	-20℃ ~ +40℃
Operating humidity	5 to 95% RH (Non-condensing)
Operating power	AC220V 60Hz 8 channel - Max 250W / 32 channel -Max 400W / 64 channel-Max 600W 128 channel - Max 1KW / 208~260 channel-Max 1.5KW
Dimensions	800 x 1800 x 600 (W x H x D)mm
Approval	KFI(AC220V, Separated type, Industrial, Immediately warning, Infrared, Diffusion, LNG) KF, CCCF

GAS & FLAME
DETECTION
SYSTEM

GPD-100

Cartridge Sensor & Sampling Portable Detector



08

Portable Gas Detector



Cartridge Sensor & Sampling Portable Detector
GPD-100

Cartridge Sensor & Sampling Portable Detector

GPD-100

Feature

- ▷ Fast response detection of gas leakage with a high efficient pump inside
- ▷ Easy replacement with a cartridge type sensor (same as GTD-5000 cartridge)
- ▷ Easy calibration and get information from the face displayed with backlit color LCD
- ▷ 10 hours continuously operation with a rechargeable Li-ion battery and charge power with a power adapter
- ▷ Data logging function with Micro SD (T-flash) card (Text File) (Option)

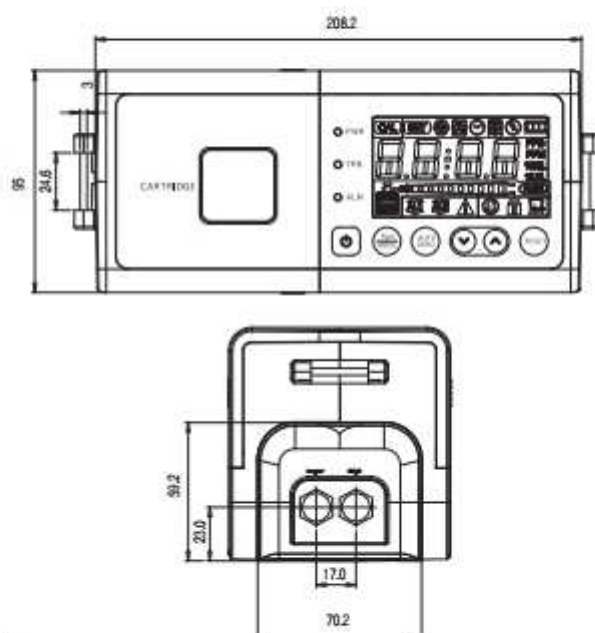


CE

General



Dimension (Unit:mm)



Accessories



Specification

* Specifications are subject to be changed without prior notice.

	AUTO SAMPLING & CARTRIDGE SENSOR TYPE PORTABLE GAS DETECTOR		
Model	GPD-100		
Measuring gas	Flammable gases	VOC gases	O ₂ / Toxic gases(CO, Cl ₂ , NH ₃ & etc)
Measuring type	Auto Sampling type		
Measuring method	Catalytic cell, Hot-wire semiconductor cell Thermal conductivity cell	Photo-Ionization Detector(PID)	Semiconductor cell, Electrochemical cell
Measuring range	0~100%LEL, 0~100%Vol	5ppb ~ 300ppm	Refer to Toxic Gas Measuring Range (166 page)
Response time	Flammable gases(< 15sec / 90% scale)	VOC gases(< 5sec / 90% scale)	Toxic gases(< 45sec / 90% scale)
Accuracy	± 3% / Full Scale		
Parameter control	Front membrane key (power, calibration, maintenance, alarm setting, reset)		
Operation mode display	3~LED (power, 2 colored 2-stage alarm, 1-trouble)		
Measuring value display	LCD Display (4-Digit)		
Sampling method	Diaphragm Pump		
Sampling line	OD 1/4" (Standard)		
Flow rate	Normal 300~500 ml/min (0~1000 ml/min max)		
Data logging	More than 10 hours data logging function with Micro SD (T-flash) card (Option) / 2G Byte max		
Operating temperature	-20°C to 50 °C		
Operating humidity	5 to 99% RH (Non-condensing)		
Operating power	Battery : DC 7.4V / 4.4A Input: AC 100~230V 50 / 60Hz free volt . Output :DC12V 2.0A		
Material	Poly carbonate		
Dimensions	218 (W) × 95 (H) × 100 (D) mm		
Weight	1.2kg		
Approval	CE (EN50270:2006)		

Flame Detector Spec. Comparison

Model	GT-1000
	
Enclouse Type	Explosion proof
Field of View (H : Horizontal V : Vertical)	H : 90° V : 90°
Measuring Method	UV/IR
Analog output	4-20mA
Digital output(Optional)	RS-485
Alarm Output Relay	2 Alarms, 1 Fault
Operation Power	24V DC
Local Certificate	KCs
Oversea Certificate	N/A

09

Flame Detector



UV/IR Flame Detector
GTF-1000

UV/IR Flame Detector

GTF-1000

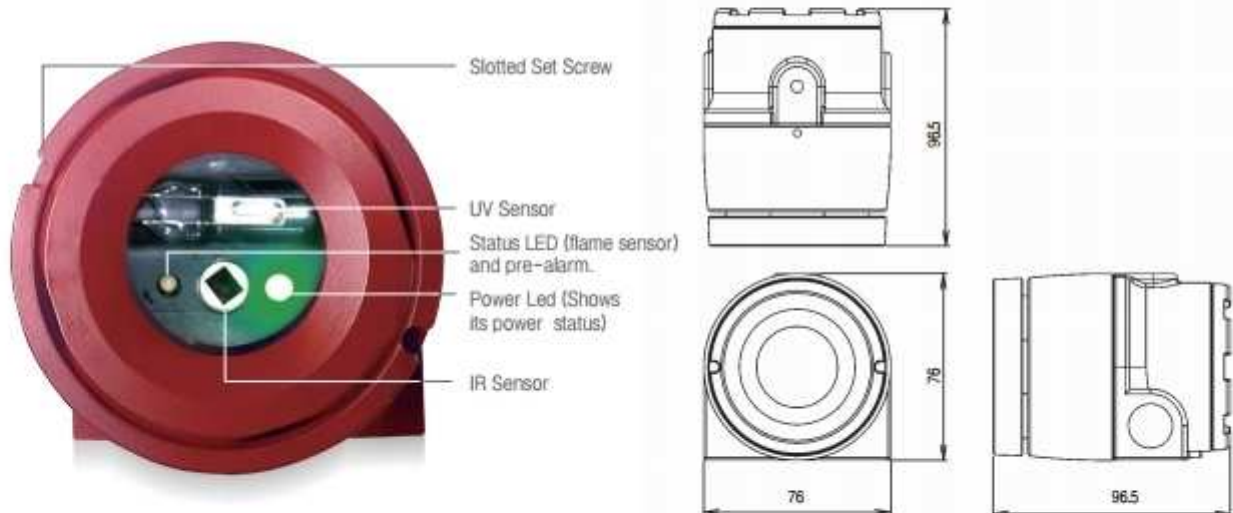
Feature

- ▷ Fast response with high sensitive UV and IR sensor
- ▷ 4 Selectable Sensitivity can be adjusted by a switch, alarm, setting.
- ▷ RS-485 Communication, 4-20mA output signal.(Switch can adjust Address)
- ▷ Contact output of Fire Alarm and Fault Alarm through Relay
- ▷ O.C(Open Collector) with 24V and 10mA output
- ▷ Switch activates Latch function



General

Dimension (Unit:mm)



Accessories



4-20mA module

RS-485 module

Cable gland

Specification

* Specifications are subject to be changed without prior notice.

GTF-1000				
Wave Lengths	185 to 260nm(UV) / CO ₂ Bands(IR)			
Detection Distance	n-Heptane(30m)			
Field of View	100° max. conical			
Typical Response Time	< 3sec @ 30m(n-Heptane)			
Minimum Sensor Response Time	200 ms			
Typical Alarm	Alarm LED & Relays & 4-20mA & RS-485 Modbus			
Approval	Ex d IIC T4, T5, T6			
Temperature Range	T6=-50℃ to +60℃, T5=-50℃ to +75℃, T4=-50℃ to +85℃			
Humidity Range	93% RH, non-condensing			
Status Indicator	4 - 20mA DC(Optional) / RS-485 Modbus(Optional) Alarm LED / Power LED			
RS-485 Output (Option)	Modbus Protocol Address : 1 to 63 (Dip switch Selectable)			
Relay Output	2SPDT Relay contact(1A at 30Vdc or 0.3A at 125Vac) Alarm, Fault			
Open Collector Output	+24V signal output Normal status : Vin(Normally +24Vdc), Alarm status: 0V			
Operating Voltage	Standard : 19.2 ~ 28.8V DC(24V DC normal) / 85mA Max.			
Power Consumption	Full Option(mA × 85) Normal : 75mA , In case of fire : 85mA	485 Out Option Normal : 70mA , In case of fire : 80mA	mA Out Option Normal : 65mA , In case of fire : 75mA	Normal Option Normal : 65mA , In case of fire : 75mA
Signal Cable Connection	Standard type : (CWVS or CWVSB 1.5sq 1)+Shield			
Conduct Connection	1/2" PF, NPT(1/2" PF 7[보시임])			
Weight	Standard type : 0.7 kg			
Dimensions	Standard type : 76(W) × 76(H) × 96.5(D) mm			
APPROVAL	Explosion Proof Type KCs, KP			

GAS & FLAME
DETECTION
SYSTEM

GTL-200

Flame Proof Type Sounder & Beacon Combination



10

Alarm Signalling / Manual Call Point



Flame Proof Type Sounder
& Beacon Combination
GTL-200



Flame Proof Type Sounder
GTL-200B



Flame Proof Type Beacon
GTL-200L

Flame Proof Type Sounder & Beacon Combination

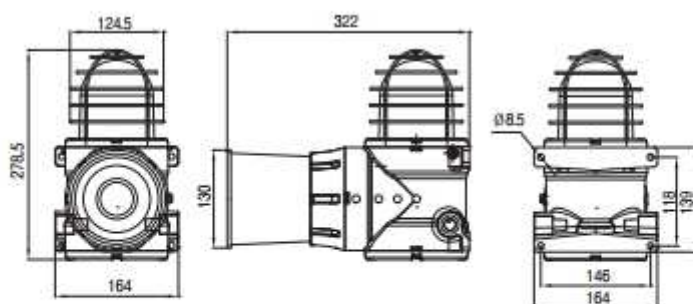
GTL – 200 Series

Feature

- ▷ Combined Explosion-proof Sounder & Beacon using LED Light sources
- ▷ Excellence of high effect of signal light radiation using our unique lens type luminescence system
- ▷ Available of sound types & volume control with internal switch
- ▷ Available in controlling the rotation speed of reflector
- ▷ Available in various colors (Red, Yellow, Green, Blue)
- ▷ Max Output : 120 dB
- ▷ Available in setting options depend on field condition



External view drawing



Specification

ITEM	FLAME PROOF TYPE SOUNDER & BEACON COMBINATION
Product Type	LED Lens / Rotating Reflection
Material	Body : ALDC12, Reflector : heat-resistant ABS Lamp Lens : heat-resistant PC, GLASS : Explosion-proof Tempered glass, Protection case-SS316L
Sounder out put	MAX 120 dB
LED Color	Green, Red, Yellow, Blue (Choose 1)
Power Supply	AC110 / 220V 50~60Hz DC12~48V
Power Consumption)	AC110V=0.327A / 220V = 0.163A MAX DC12V = 3.0A / DC24V=1.5A / DC48V = 0.75A MAX
Operation Temp.	T5=-40 to 60°C / T5,T4=-40 to 70°C
Operation Humidity	0 to 95% RH (Non-condensing)
Conduct Connection	1/2" or 3/4" PF, NPT(3/4" PF standard feature)
Dimensions	164(W) X 278.5(H) X 322(177)(D) mm
Weight	App. 6.2kg
Approval	Explosion proof type (Ex d IIC T4,T5,T6) KCs / IP66



GTL-200B/ Flame-Proof Sounder

Specification

ITEM	SERIES SPECIFICATION
Product Type	Signal Phone
Material	Body = ALDC12, Flame Arrester = SS316L
Max	MAX 120 dB
Power Supply	AC110 / 220V 50~60Hz DC12~48V
Power Consumption	AC110V=0.218A/220V=0.109A Max DC12V= 2.0A / DC24V=1A / DC48V=0.5 AMax
Operation Temp.	T6=-40 to 60°C / T5,T4=-40 to 70°C
Operation Humidity	0 to 95% RH (Non-condensing)
Conduct Connection	1/2" or 3/4" PF, NPT(3/4" PF standard feature)
Dimensions	164(W) X 139(H) X 322(177)(D) mm
Weight	App. 5.0kg
Approval	Explosion proof type (Ex d IIC T4,T5,T6) KCs / IP66 Explosion proof type(Exd T4,T5,T6) ATEX, IECEx, CE



GTL-200L/ Flame-Proof Warning Light

Specification

ITEM	SERIES SPECIFICATION
Product Type	LED Lens / Rotating Reflection
Material	Body : ALDC12, Reflector : heatresistant ABS Lamp Lens : heat-resistant PC, GLASS : Explosion-proof Tempered glass, Protection case = SS316L
LED Color	Green, Red, Yellow, Blue (Choose 1)
Power Supply	AC110 / 220V 50~60Hz DC12~48V
Power Consumption	AC110V=0.109A / 220V = 0.054A MAX DC12V = 1.0A / DC 24V=0.5A / DC48V = 0.25A MAX
Operation Temp.	T6=-40 to 60°C / T5,T4=-40 to 70°C
Operation Humidity	0 to 95% RH (Non-condensing)
Conduct Connection	1/2" or 3/4" PF, NPT(3/4" PF standard feature)
Dimensions	164(W) X 278.5(H) X 177(D) mm
Weight	App. 5.0kg
Approval	Explosion proof type (Ex d IIC T4,T5,T6) KCs / IP66 Explosion proof type(Exd T4,T5,T6) ATEX, IECEx, CE



GTL-200B/ Flame-Proof Combination

Composition type	Structural elements
EX) TYPE - 1	Warning Light(RED) + Sounder
EX) TYPE - 2	Warning Light(RED) + Warning Light(BLUE)
EX) TYPE - 3	Warning Light(RED) + Warning Light(YELLOW) + Warning Light(BLUE)
EX) TYPE - 4	Warning Light(RED) + Warning Light(YELLOW) + Warning Light(BLUE) + Sounder Explosion proof type(Exd T4,T5,T6) ATEX, IECEx, CE

**GAS & FLAME
DETECTION
SYSTEM**

Calibration Kit



11

Calibration Gas & Industrial Safety Product



Calibration Can Gas



Calibration Can Gas

Calibration Can Gas

Feature

- ▷ Easy to use
 - Calibration can gas also has pressure controller and gas gauge (regulator), which gas flow rate can be checked easily.
- ▷ Reasonable Price
 - Our can gas is inexpensive and convenient, compared with traditional big bomb having high price.
- ▷ Light Container and Easy to Carry
 - Calibration can gas is small (300mm X 65mm) and light (150g)
 - Owing to small and lightweight, Calibration can gas is easy to carry with and user can calibrate and check a lot of detectors.
- ▷ Safety
 - Calibration can gas is designed to stand inside filling pressure (8kg/cm²)
 - Combustible gas filled in Calibration can is inflammable (density below LEL)
 - Toxic gas filled in Calibration can has no toxicity (density below TLV)



Calibration Can Gas

CYLINDERS

Picture	Contents Service Pressure Dimension Weight	Material (Color)	Mixture Tolerance	Warranty
 1AL Aerosol 2AL, 8AL, 10AL	11 Liters(10.7 Bar) 279 x 70mm(0.14 Kg)	Aluminum (Natural Aluminum)	H2S : $\pm 20\%$ All others : $\pm 5\%$	Mixtures containing H2S are warranted for 3 months. Non-reactive gas mixtures are warranted for 12 months.
	34 Liters(34.5 Bar) 282 x 74mm(0.44 Kg)		51 - 300 ppm : $\pm 2\%$ 21 - 50 ppm : $\pm 5\%$ 2 - 20 ppm : $\pm 10\%$	LEL Mixtures and Non-Reactive Mixtures 36 months.
	58 Liters(34.5 Bar) 362 x 89mm(0.75 Kg)			H2S, SO2, and H2S/CO/LEL/O2/N2, Mixtures 24 months.
	116 Liters(69 Bar) 381 x 89mm(1.1 Kg)			NO, NH3, PH3 and HCN Mixtures 18 months CL2 Mixtures 9 months. HCL Mixtures 12 months. NO2 Mixtures 6 months.
 6D 5E	103 Liters(69 Bar) 356 x 83mm(1.4 Kg)	Steel (Beige)	All minor components are certified to $\pm 2\%$	Most gas mixtures are warranted for 36 months.
	552 Liters(151.8 Bar) 527 x 114mm(3.18 Kg)	Steel (White)		
 7EOC / 7HP	17 Liters(16.6 Bar) 279 x 74mm(0.47 Kg) 34 Liters(34.5 Bar) 279 x 74mm(0.68 Kg)	Steel (Beige or Red)		

REGULATORS

Picture	Model No.	2AL	8AL	6D	5E	7EOC	7HP	Low ppm (Corrosive Gases)	ppm NH3	High Pressure (Cylinders)	HCl & Cl2
	713					O	O				
	715	O	O	O							
	718				O					O	
	702					O	O				
	705	O	O	O							
	1001				O			O		O	
	1002				O			O		O	
	1003				O			O		O	
	1767	O	O	O							
	1768	O	O	O							
	1781	O	O						O		
	1782	O	O						O		
	DFR 2001	O	O	O							
	DFR 2003				O					O	
	DFR 2004	O	O								O
	DFR 2007					O	O				
	Trigger 4205	O	O	O							
	Trigger 4206	O	O	O							
	Trigger 4210	O	O	O							
	Trigger 4211	O	O	O							

**GAS & FLAME
DETECTION
SYSTEM**

GMS-2000



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Gas Monitoring System Configuration



Configuration—1

(Gas Detector ⇔ Receiver)



Configuration—2

(Gas Detector ⇔ Receiver ⇔ PC Monitoring System)



Configuration—3

(Gas Detector ⇔ PLC & Signal Converter ⇔ PC Monitoring System)



Configuration—4

(Gas Detector Serial Data Communication ⇔ PC Monitoring System)



Configuration—4

(Gas Detector Serial Data Communication ⇔ PC Monitoring System)

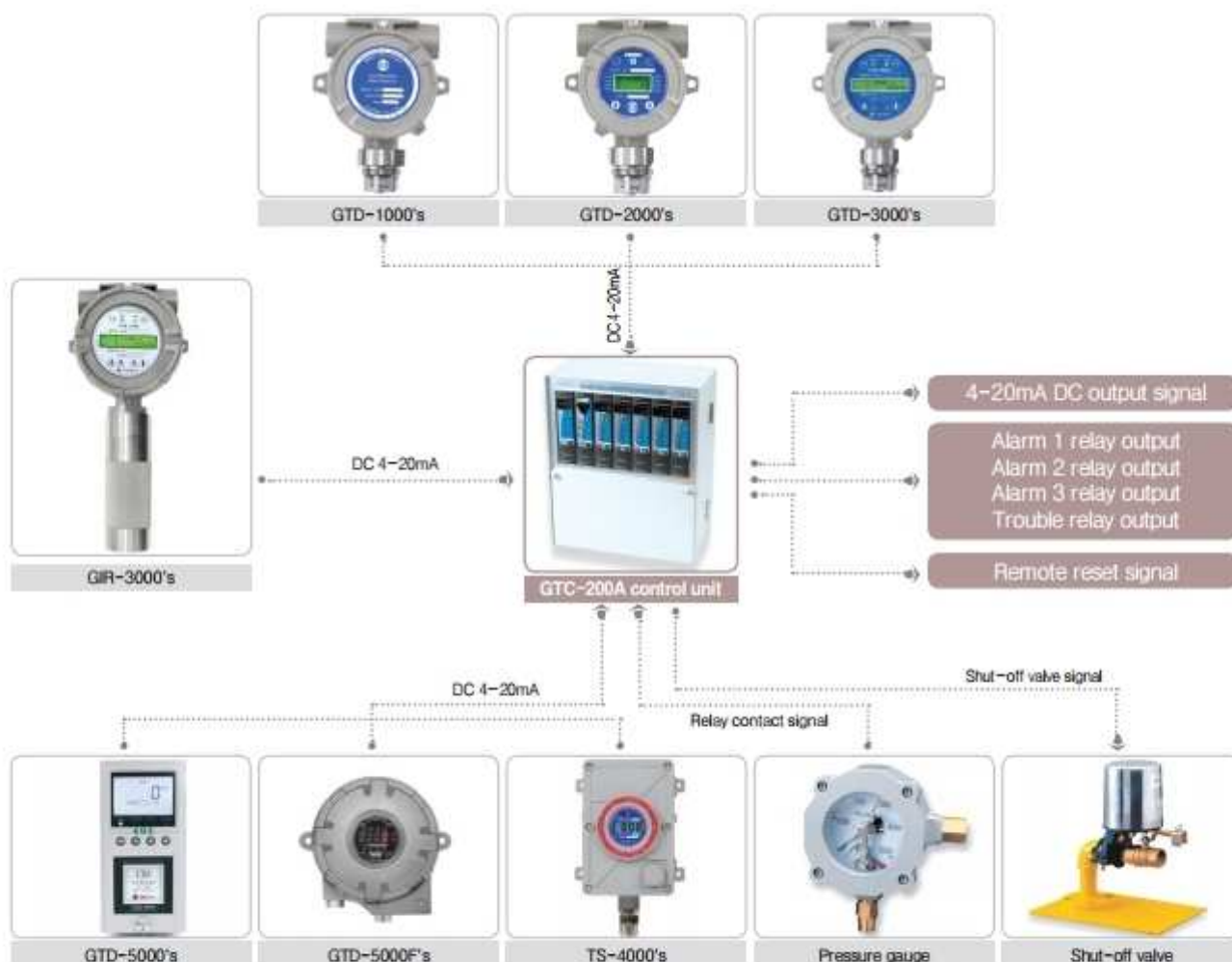
Configuration-1

(Gas Detector ⇄ Receiver)

Feature

- ▷ Real time display (gas detector operation condition)
- ▷ Easy check of gas density with 4-digit FND and Bar-graph
- ▷ Easy expansion by using din-rail case type
- ▷ Easy maintenance due to simple configuration
- ▷ Visual and audible indication for each alarm
- ▷ Relay contact output for each alarm
- ▷ 4-20mA DC output for every single gas detector

This configuration is the most widely used type in industrial plants and each gas detector is connected with a control unit. The control unit receives 4-20mA DC signal from a gas detector and shows operating condition and gas leakage. An user can easily check them with 4-digit FND, Bar-graph and LED to take immediate action when alarm is triggered.



Configuration-2

(Gas Detector ⇄ Receiver ⇄ PC Monitoring System)

Feature

- ▷ Real time monitoring and control of gas detectors
- ▷ Integrated management of whole gas detectors with one graphic
- ▷ Dual structure system
(PC monitoring system + Gas detector receiver)
- ▷ Display switch to a trouble point screen
- ▷ Possible to check logged alarm history
- ▷ Logging real time data
- ▷ Easy data analyzation with a real time trend
- ▷ Easy reporting (day / week / year / user defined date)

This configuration is PC monitoring system which possible to be checked operating condition of gas detectors and gas leakage on PC screen at a look. An user can take immediate action when alarm is triggered.



Configuration-3

(Gas Detector ⇄ PLC & Signal Converter ⇄ PC Monitoring System)

Feature

- ▷ Easy expansion with PLC
- ▷ Easy configuration of digital output and relay output
- ▷ Real time monitoring and control of gas detector with realistic graphic
- ▷ Integrated management of whole gas detectors with one graphic
- ▷ Display switch to a trouble point screen when alarm is occurred
- ▷ Possible to check logged alarm history
- ▷ Logging real time data
- ▷ Easy reporting (day/week/year/user defined date)

This configuration is PC monitoring system and each gas detector is connected to PLC. PLC converts analog signal to digital signal and sends them for PC to show operating condition of gas detectors and gas leakage at a look. An user can take immediate action when alarm is triggered.



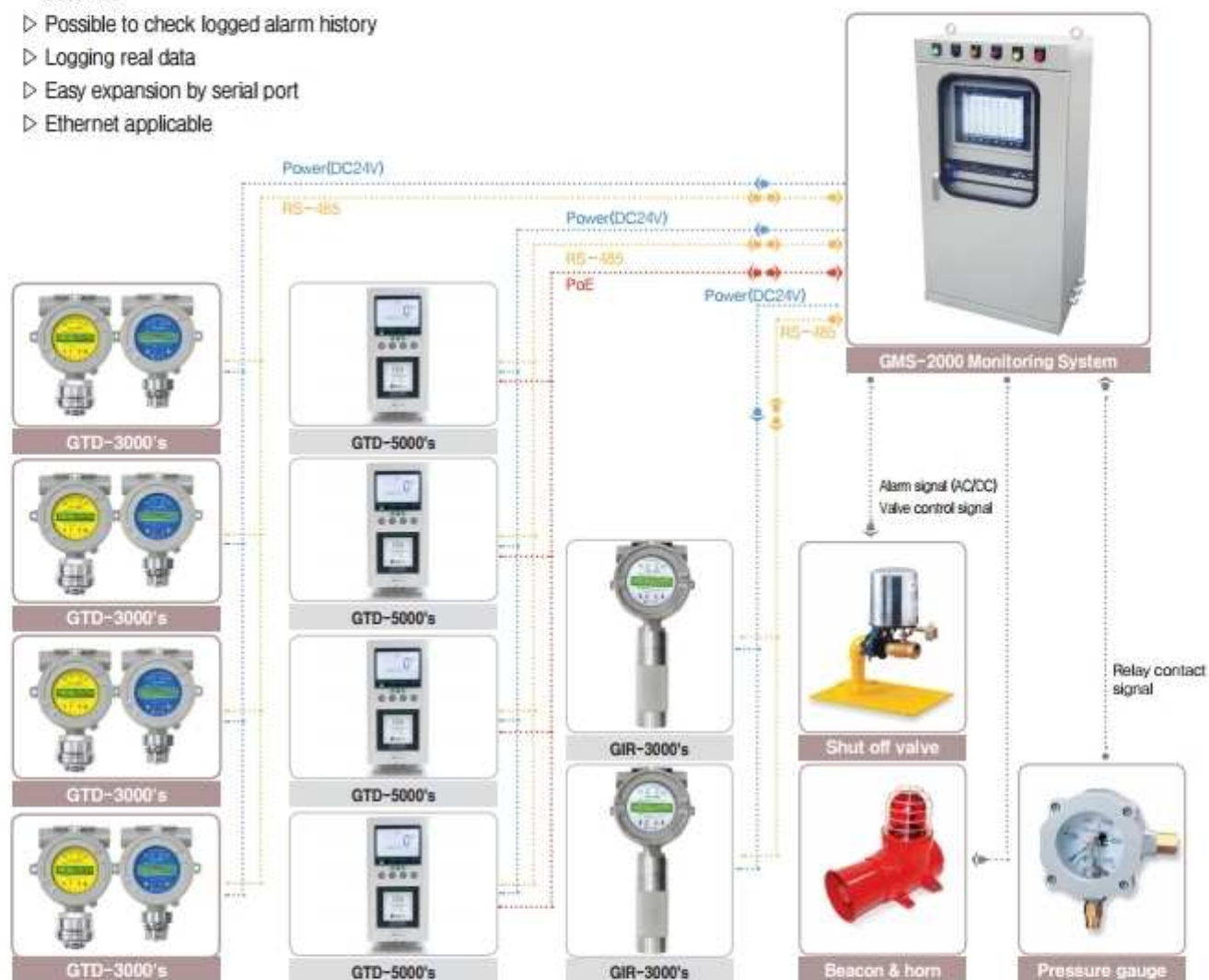
Configuration-4

(Gas Detector Serial Data Communication ⇄ PC Monitoring System)

Feature

- ▷ Integrated management of all gas detectors with one graphic
- ▷ Easy configuration with low cost by serial data communication (RS-485 Modbus)
- ▷ Easy output configuration on alarm (by group or single)
- ▷ Display switch to a trouble point screen when alarm is occurred
- ▷ Possible to check logged alarm history
- ▷ Logging real data
- ▷ Easy expansion by serial port
- ▷ Ethernet applicable

This is touch screen & PC monitoring type system. It communicates with each gas detector by serial data communication.



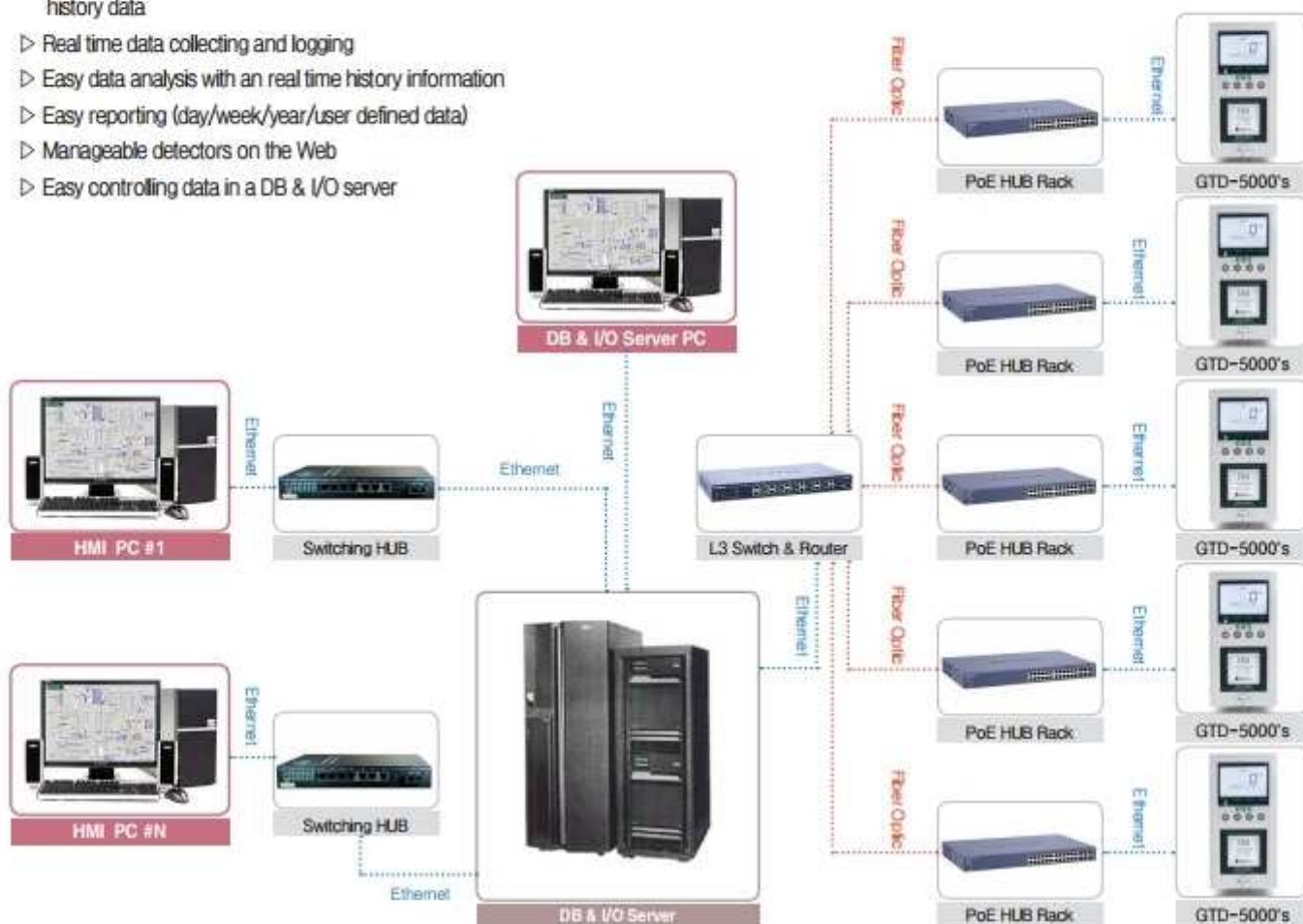
Configuration-5

Gas Detector (POE) ⇔ DB & I/O Server ⇔ PC Monitoring System

Feature

- ▷ Real time monitoring and control of gas detectors with the realistic graphic
- ▷ Integrated management of all gas detectors with the one graphic
- ▷ Display switch to the trouble site on occurring alarm situation
- ▷ Available of saving, searching and printing a detailed alarm history data
- ▷ Real time data collecting and logging
- ▷ Easy data analysis with an real time history information
- ▷ Easy reporting (day/week/year/user defined data)
- ▷ Manageable detectors on the Web
- ▷ Easy controlling data in a DB & I/O server

This is PoE (Power over Ethernet) monitoring system. Each gas detector is connected to PoE Hub through Ethernet UTP cables. It is possible to send power and signal at the same time to UTP without individual power supply. The main features of this monitoring system are simple installation and cost saving effect.



GAS DETECTOR SELECTION GUIDE

	Gas Name		Lower Explosive Limit (VOL%)	Specific Gravity (AIR=1)	CAS No.	Suitable Measuring Ranges
1	Acetaldehyde	CH ₃ CHO (C ₂ H ₄ O)	4	1.5	75-07-0	Ex : 100%LEL
2	Acetic acid	CH ₃ COOH	5.4	2.07	64-19-7	Tx : 20ppm
3	Acetone	CH ₃ COCH ₃ (C ₃ H ₆ O)	2.2	2	67-64-1	Ex : 100%LEL IR : 100%LEL
4	Acetylene	C ₂ H ₂	2.5	0.91	74-86-2	Ex : 100%LEL
5	Acrylic acid(AA)	C ₃ H ₄ O ₂	2.4	2.5	79-10-7	IR : 100%LEL SC : 1000ppm Tx : 300ppm, 100ppm
6	Acrylonitrile(AN)	C ₃ H ₃ N	3	1.8	107-13-1	Ex : 100%LEL Tx : 1000ppm
8	Allyl chloride	CH ₂ =CHCH ₂ Cl	2.9	2.6	107-05-1	Ex : 100%LEL Tx : 25ppm
9	Ammonia	NH ₃	15	0.59	7664-41-7	Ex : 100%LEL Tx : 75ppm
10	Aniline	C ₆ H ₅ NH ₂	1.3	3.2	62-53-3	Tx : 100ppm
11	Anisole	CH ₃ OC ₆ H ₅	0.3	3.7	100-66-3	Ex : 100%LEL IR : 100%LEL
12	Antimony pentachloride	SbCl ₅	-	10.32	7647-18-9	Tx : 15ppm
13	Arsenic hydride (Arsine)	AsH ₃	-	4.31	7784-42-1	Tx : 0.3ppm
14	Arsenic pentafluoride	AsF ₅	-	-	7784-36-3	Tx : 9ppm
15	Arsenic trichloride	AsCl ₃	-	6.3	7784-34-1	Tx : 15ppm
16	Benzene	C ₆ H ₆	1.2	2.8	71-43-2	Ex : 100%LEL IR : 100%LEL PID : 20ppm/100ppm
17	Boron tribromide	BBr ₃	-	8.6	10294-33-4	Tx : 9ppm, 15ppm
18	Boron trichloride	BCl ₃	-	4.03	10294-34-5	Tx : 15ppm
19	Boron trifluoride	BF ₃	-	2.4	7637-07-2	Tx : 9ppm
20	Bromine	Br ₂	-	3.12	7726-95-6	Tx : 3ppm
21	1,3-Butadiene	C ₄ H ₆	-	-	106-99-0	Ex : 100%LEL
22	Butene(butylene)	C ₄ H ₈	-	-	-	Ex : 100%LEL
23	i-Butane	C ₄ H ₁₀	1.8	2.01	75-28-5	Ex : 100%LEL IR : 100%LEL SC : 2000 ppm
24	Butyl acetate	C ₆ H ₁₂ O ₂	1.2	4	123-86-4	IR : 100%LEL
25	i-Butyl acetate	C ₆ H ₁₂ O ₂	1.3	4	110-19-0	Ex : 100%LEL IR : 100%LEL SC : 1000 ppm
27	n-Butyl alcohol	CH ₃ (CH ₂) ₂ CH ₃ OH	1.4	2.6	71-36-3	Ex : 100%LEL IR : 100%LEL Tx : 100ppm
28	tert-Butyl mercaptan	C ₄ H ₁₀ S	1.4	3.1	109-79-5	Tx : 50ppm
29	Carbon dioxide	CO ₂	-	1.522	124-38-9	IR : 5vol% , 20vol%
30	Carbon disulfide	CS ₂	1	2.63	75-15-0	Tx : 100ppm
31	Carbon monoxide	CO	12.5	0.97	630-08-0	IR : 1vol% , 20vol% Tx : 150ppm , 300ppm
32	Carbonyl sulfide	COS	-	2.1	463-58-1	Tx : 100ppm, 2000ppm
33	Chloride	Cl ₂	-	2.5	7782-50-5	Tx : 3ppm
34	Chlorine dioxide	ClO ₂	>10	2.3	10049-04-4	Tx : 1ppm
35	Chlorine trifluoride	ClF ₃	-	3.18	7790-91-2	Tx : 1ppm
36	Chlorobenzene	C ₆ H ₅ Cl	1.3	3.88	108-90-7	Ex : 100%LEL
37	Chloroform	CHCl ₃	-	4.12	67-66-3	Tx : 30ppm, 200ppm
38	Chlorosulfonic acid	HSO ₃ Cl	-	4.02	7790-94-5	Tx : 9ppm
39	cumene	C ₉ H ₁₂	0.9	4.2	98-82-8	IR : 100%LEL
41	Cyclohexanone	C ₆ H ₁₀ O	1.1	3.4	108-94-1	Tx : 200ppm IR : 100%LEL
42	Cyclopentane	C ₅ H ₁₀	1.1	2.4	287-92-3	Ex : 100%LEL IR : 100%LEL
43	Cyclopropane	C ₃ H ₆	2.4	1.88	75-19-4	Ex : 100%LEL

GAS DETECTOR SELECTION GUIDE

	Gas Name		Lower Explosive Limit (VOL %)	Specific Gravity (AIR=1)	CAS No.	Suitable Measuring Ranges
44	Diborane	B ₂ H ₆	0.8	0.96	19287-45-7	Tx : 0.3ppm
45	1,2-Dichloroethane(EDC)	CH ₂ ClCH ₂ Cl (C ₂ H ₄ Cl ₂)	6.2	3.42	107-06-2	Ex : 100%LEL IR : 100%LEL Tx : 100ppm
46	1,2-Dichloroethylene cis	C ₂ H ₂ Cl ₂	9.7	3.34	156-59-2	Tx : 500ppm
47	1,2-Dichloroethylene trans (DCE)	C ₂ H ₂ Cl ₂	9.7	3.34	156-60-5	Tx : 500ppm
49	Dichloromethane(R-30)	CH ₂ Cl ₂	13	2.9	75-09-2	IR : 100%LEL Tx : 500ppm
50	Dichlorosilane (DCS)	SiH ₂ Cl ₂	4.1	3.48	4109-96-0	Tx : 15ppm
51	Di-Ethylamine(DEA)	(C ₂ H ₅) ₂ NH	1.8	2.5	109-89-7	Tx : 100ppm
52	Diethyl carbonate (DEC)	C ₅ H ₁₀ O ₃	1.4	4.1	105-58-8	Ex : 100%LEL IR : 100%LEL
53	Diethyl ether(Ethyl ether)	(C ₂ H ₅) ₂ O	1.7	2.6	60-29-7	Ex : 100%LEL IR : 100%LEL Tx : 1000ppm
55	Difluoro chloromethane(R22)	CHClF ₂	-	3	75-45-6	Tx :200ppm, 500ppm 5000ppm, 8000ppm
56	Difluoromethane(R32)	CH ₂ F ₂	12.7~14	1.8	75-10-5	IR : 100%LEL Tx : 2000ppm SC : 200~2000ppm
57	Di-isopropylamine	C ₆ H ₁₅ N	0.8	3.5	108-18-9	Ex : 100%LEL IR : 100%LEL Tx : 100ppm
59	Dimethoxymethane	C ₃ H ₈ O ₂	1.6	2.6	109-87-5	Ex : 100%LEL IR : 100%LEL PID : 200ppm
60	Dimethylacetamide(DMAC)	C ₄ H ₉ NO	1.8	3.01	127-19-5	Ex : 100%LEL PID : 30ppm
61	Di-Methylamine(DMA)	(CH ₃) ₂ NH	2.8	1.6	124-40-3	Ex : 100%LEL IR : 100%LEL Tx : 100ppm PID: 15ppm/ 300ppm
62	Di-Methyl carbonate(DMC)	C ₃ H ₆ O ₃	4.2	3.1	616-38-6	Ex : 100%LEL IR : 100%LEL
63	Dimethyl dichlorosilane		1.4	4.4	68611-44-9	Tx : 15ppm
64	Dimethyl disulphide (DMDS)	C ₂ H ₆ S ₂	1.1	3.24	624-92-0	Tx : 50ppm PID : 3ppm/40ppm
65	N,N-Dimethylformamide	C ₃ H ₇ NO	2.2	2.5	68-12-2	SC : 100ppm PID : 10ppm/150ppm
66	Dimethyl Sulfide(DMS)	C ₂ H ₆ S	2.2	2.1	75-18-3	Tx : 100ppm
68	1,4-Dioxane	C ₄ H ₈ O ₂	2	3		Ex : 100%LEL IR : 100%LEL
69	Disilane	Si ₂ H ₆		2.15	1590-87-0	Tx : 15ppm
70	Di-Phenylether	(C ₆ H ₅) ₂ O	0.8	5.9	101-84-8	PID: 10ppm / 200ppm
71	Epichlorohydrin	C ₃ H ₅ ClO	-	-	106-89-8	Ex : 100%LEL IR : 100%LEL Tx : 100ppm, 50ppm
72	Ethane	C ₂ H ₆	3	1.05	74-84-0	Ex : 100%LEL
73	Ethanol	C ₂ H ₅ OH	3.3	1.59	64-17-5	Ex : 100%LEL IR : 100%LEL Tx : 50ppm, 100ppm
75	Ethyl acetate	CH ₃ CO ₂ C ₂ H ₅	2.2	3	141-78-6	Ex : 100%LEL IR : 100%LEL SC : 1000ppm
77	Ethyl amine	C ₂ H ₅ NH ₂	3.5	1.55	75-04-7	Tx : 100ppm
78	Ethyl benzene	C ₆ H ₅ C ₂ H ₅	1	3.7	100-41-4	Ex : 100%LEL
81	Ethylene	C ₂ H ₄	2.7	0.98	74-85-1	Ex : 100%LEL IR : 100%LEL Tx : 2000ppm SC : 2000ppm

GAS DETECTOR SELECTION GUIDE

	Gas Name		Lower Explosive Limit (VOL%)	Specific Gravity (AIR=1)	CAS No.	Suitable Measuring Ranges
83	Ethyl formate	C3H6O2	2.7	2.55	109-94-4	Ex : 100%LEL IR : 100%LEL Tx : 200ppm SC : 500ppm
84	Ethylene glycol monomethyl ether (EGME) = 2-methoxy ethanol = methyl cellosolve	C3H8O2	2.3	2.62	109-86-4	Ex : 100%LEL IR : 100%LEL Tx : 20ppm
85	Ethylene oxide(EO)	C2H4O	3	1.5	75-21-8	Ex : 100%LEL IR : 100%LEL Tx : 30ppm , 100ppm
86	Ethyl methyl carbonate(EMC)	-	-	-	623-53-0	SC : 500ppm PID : 500 / 5000ppm
87	Ethyl mercaptan (EtSH) (Ethanethiol) EtM	C2H6S	2.8	2.14	75-08-1	Tx : 50ppm
88	Fluorine	F2	-	1.3	7782-41-4	Tx : 3ppm
89	Fluoroform(R-23)	CHF3	-	2.4	75-46-7	Tx : 10,000ppm
90	Fluoromethane	CH3F	-	1.195	593-53-3	Tx : 2000ppm
91	Formaldehyde	CH2O	7	1.067	50-00-0	Tx : 10ppm
92	Formic acid	HCOOH	18	1.6	64-18-6	Tx : 20ppm, 30ppm, 50ppm
94	Germane	GeH4	-	2.65	7782-65-2	Tx : 1ppm
95	Germanium tetrachloride	GeCl4	-	-	10038-98-9	Tx : 15ppm
96	Germanium tetrafluoride	GeF4	-	-	-	Tx : 9ppm
97	Helium	He	-	0.14	7440-59-7	TC : 100Vol%
98	n-Heptane	C7H16	1.1	3.46	142-82-5	Ex : 100%LEL IR : 100%LEL
99	n-Hexane	C6H14	1.1	3	110-54-3	Ex : 5000ppm 100%LEL IR : 100%LEL
100	Hexafluorobutadiene	C4F6	7	-	685-63-2	IR : 2000ppm Tx : 100ppm, 2000ppm
101	Hexamethyldisilazane(HMDS)	C6H19NSi2	0.8	4.6	999-97-3	IR : 100%LEL Tx : 50ppm
102	Hydrogen	H2	4	0.07	1333-74-0	TC : 100Vol% Ex : 100%LEL Tx : 2000ppm
103	Hydrogen bromide	HBr	-	2.8	10035-10-6	Tx : 9ppm, 20ppm
104	Hydrogen chloride	HCl	-	1.3	7647-01-0	Tx : 3ppm, 15ppm
105	Hydrogen cyanide (AC)	HCN	-	-	74-90-8	Tx : 30ppm
106	Hydrogen fluoride	HF	-	0.69	7664-39-3	Tx : 9ppm
107	Hydrogen peroxide	H2O2	-	1.17	7722-84-1	Tx : 100ppm
108	Hydrogen selenide	H2Se	-	2.8	7783-07-5	Tx : 0.25ppm
109	Hydrogen sulfide	H2S	4.3	1.19	7783-06-4	Tx : 30ppm
110	isooctyl alcohol (2-ethyl-1-hexanol)	C8H18O	0.88	4.49	104-76-7	Ex : 100%LEL
111	iso-propyl alcohol(IPA)	C3H7OH	2	2.1	67-63-0	Ex : 100%LEL IR : 100%LEL Tx : 50ppm, 100ppm
112	Methane	CH4	5	0.554	74-82-8	Ex : 100%LEL IR : 100%LEL
113	Methyl acetate	C3H6O2	3.1	2.6	79-20-9	Ex : 100%LEL IR : 100%LEL
114	Methyl acrylate(MA)	C4H6O2	2.8	3	96-33-3	Ex : 100%LEL IR : 100%LEL Tx : 250ppm
115	Methyl alcohol	CH3OH	5.5	1.1	67-56-1	Ex : 100%LEL IR : 100%LEL Tx : 30ppm, 50ppm
116	Methyl amine	CH5N	4.9	1.07	74-89-5	Tx : 100ppm
117	Methyl bromide	CH3Br	10	3.3	74-83-9	Tx : 100ppm

GAS DETECTOR SELECTION GUIDE

	Gas Name		Lower Explosive Limit (VOL%)	Specific Gravity (AIR=1)	CAS No.	Suitable Measuring Ranges
118	Methyl chloride(MC, R40)	CH ₃ Cl	8.1	1.8	74-87-3	Ex : 100%LEL IR : 100%LEL Tx : 1500ppm
119	Methyl chloroformate(MCF)	C ₂ H ₃ ClO ₂	6.7	3.3	79-22-1	IR: 100%LEL Ex: 100%LEL SC: 200ppm
120	Methyl cyclohexane(MCH)	C ₇ H ₁₄	1.2	3.4	108-87-2	Ex : 100%LEL IR : 100%LEL
121	Methyl chlorosilane(MCS)		5.9	-	993-00-0	Tx: 15ppm
122	Methyl trichlorosilane(MTCS)	CH ₃ Cl ₃ Si	-	-	75-79-6	Tx: 15ppm
123	Methyl ethyl ketone(MEK)	C ₄ H ₈ O	1.8	2.41	78-93-3	Ex : 100%LEL IR : 100%LEL
126	Methacrylic acid(MAA)	C ₄ H ₆ O ₂	1.6	2.97	79-41-4	IR : 100%LEL Tx : 60ppm PID : 60ppm
127	Methyl mercaptan(MeM)	CH ₃ SH	3.9	1.66	74-93-1	Tx : 50ppm
128	Methyl methacrylate(MMA)	C ₅ H ₈ O ₂	1.7	3.5	80-62-6	Ex : 100%LEL IR : 100%LEL Tx : 500ppm
129	Methyl silane (MMS)	SiH ₃ CH ₃	-	1.59	992-94-9	Tx : 15ppm
130	Molybdenum hexafluoride	MoF ₆	-		7783-77-9	Tx : 9ppm
133	Nitric acid	HNO ₃	-	2.2	7697-37-2	Tx : 20ppm
134	Nitrogen dioxide	NO ₂	-	1.58	10102-44-0	Tx : 10ppm
135	Nitrogen monoxide	NO	-	1.04	10102-43-9	Tx : 100ppm
136	Nitrogen trifluoride	NF ₃	-	2.5	7783-54-2	Tx : 30ppm, 50ppm, 500ppm
137	Nitrous oxide	N ₂ O	-	1.53	10024-97-2	Tx : 5vol% IR : 200~4000ppm
139	NMP	C ₅ H ₉ NO	0.99	3.4	872-50-4	Ex : 100%LEL Tx : 200ppm
140	iso-Octane	C ₈ H ₁₈	1.1	3.9	540-84-1	Ex : 100%LEL IR : 100%LEL
141	Octafluoro cyclobutane	C ₄ F ₈	-	7.33	115-25-3	Tx : 200ppm
142	Octafluoro cyclopentene	C ₅ F ₈	-	-	559-40-0	Tx : 300ppm, 60ppm, 2000ppm
143	Oxygen	O ₂		1.1	7782-44-7	Tx : 25vol% , 30vol%
144	Ozone	O ₃		1.6	10028-15-6	Tx : 1ppm
145	n-Pentane	C ₅ H ₁₂	1.5	2.5	109-66-0	Ex : 100%LEL IR : 100%LEL
146	i-Pentane	C ₅ H ₁₂	1.4	2.5	78-78-4	Ex : 100%LEL IR : 100%LEL SC : 1000ppm
147	Phenol	C ₆ H ₆ O	1.36	3.2	108-95-2	Tx : 15ppm PID : 15ppm/200ppm
148	Phosgene	COCl ₂	-	3.4	75-44-5	Tx : 1ppm
149	Phosphine	PH ₃	1.8	1.17	7803-51-2	Tx : 1ppm
150	Phosphorus Pentafluoride	PF ₅	-	-	7647-19-0	Tx : 9ppm
151	Phosphorus trichloride	PCl ₃	-	4.74	7719-12-2	Tx : 15ppm
152	Phosphorus oxychloride	POCl ₃	-	5.29	10025-87-3	Tx : 15ppm
153	Propane	C ₃ H ₈	2.1	1.55	74-98-6	Ex : 100%LEL IR : 100%LEL
154	n-Propyl acetate	C ₅ H ₁₀ O ₂	2	3.5	109-60-4	Ex : 100%LEL IR : 100%LEL
155	i-Propyl acetate	C ₅ H ₁₀ O ₂	1.8	3.5	108-21-4	Ex : 100%LEL IR : 100%LEL SC : 500ppm
156	Propyl amine	C ₃ H ₉ N	2	2	107-10-8	Tx : 75ppm
157	n-Propyl bromide	C ₃ H ₇ Br	4.6	-	106-94-5	Tx : 75ppm
160	Propylene glycol monoethyl ether(PGEE)	C ₅ H ₁₂ O ₂	1.30	3.6	1569-02-4	Ex : 100%LEL IR : 100%LEL

GAS DETECTOR SELECTION GUIDE

	Gas Name		Lower Explosive Limit (VOL%)	Specific Gravity (AIR=1)	CAS No.	Suitable Measuring Ranges
161	i-Propyl mercaptan	C3H8S	-	2.6	75-33-2	Tx : 50ppm
162	n-Propyl mercaptan	C3H8S	1.8	2.6	107-03-9	Tx : 100ppm
163	Propylene	C3H6	2.4	1.5	115-07-1	Ex : 100%LEL SC : 2000ppm Tx : 2000ppm
164	Propylene oxide	C3H6O	2	2	75-56-9	Ex : 100%LEL Tx : 30ppm, 100ppm
166	Propylene Glycol Monomethyl Ether (PGME)		1.9	3.1	107-98-2	Ex : 100%LEL IR : 100%LEL
167	Propylene Glycol Monomethyl Eter Acetate (PGMEA)	C6H12O3	1.5	4.6	108-65-6	Ex : 100%LEL SC : 2000ppm IR : 100%LEL
168	Pyridine	C5H5N	1.8	2.73	110-86-1	Tx : 500ppm
169	R410a	R125 50% , R32 50%	-	3.0		Tx : 5000ppm
170	Silane	SiH4	1.37	1.3	7803-62-5	Tx : 15ppm
171	Silicon tetrachloride	SiCl4	-	-	10026-04-7	Tx : 15ppm
172	Silicon tetrafluoride	SiF4	-	-	7783-61-1	Tx : 9ppm
173	Styrene(SM)	C8H8	0.9	3.6	100-42-5	Ex : 100%LEL IR : 100%LEL SC : 2000ppm Tx : 50ppm
174	Sulfur dioxide	SO2	-	-	7446-09-5	Tx : 10ppm
175	Sulfur hexafluoride	SF6	-	-	2551-62-4	Tx : 2000ppm
176	sulfuric acid	H2SO4	-	3.4	7664-93-9	Tx : 25ppm, 100ppm
177	Tantalum fluoride	TaF5	-	-	7783-71-3	Tx : 9ppm
178	TEOS(Tetraethyl orthosilicate)	Si(CH3O)4	-	-	78-10-4	Tx : 30ppm
179	Tetrafluoroethylene	C2F4	11	3.9	116-14-3	Tx : 500ppm
180	Tetrahydrofuran	C4H8O	2	2.49	109-99-9	Ex : 100%LEL IR : 100%LEL Tx : 50ppm, 100ppm
181	Tetrahydrothiophene(THT)	C4H8S	-	3.05	110-01-0	Tx : 100ppm
182	Thinner	MEK60% , Heptane 30% Toluene1.8% ...	-	-		Ex : 100%LEL IR : 100%LEL
183	Tin tetrachloride	SnCl4	-	-	7646-78-8	Tx : 15ppm
184	Titanium(IV) fluoride	TiF4	-	-	7783-63-3	Tx : 9ppm
185	Titanium tetrachloride	TiCl4	-	-	7550-45-0	Tx : 15ppm
186	Toluene	C7H8	1.1	3.1	108-88-3	Ex : 100%LEL IR : 100%LEL PID : 100ppm
187	Trichloro ethane (TCA) [Methylchloroform(R140a)]	CH3CCl3	8	4.63	71-55-6	Tx : 1000ppm
189	Trichlorosilane(TCS)	SiHCl3	-	-	10025-78-2	Tx : 15ppm
190	Triethylamine(TEA)	C6H15N	1.2	3.5	121-44-8	Tx : 100ppm
191	Trifluoroacetic acid(TFA)	C2HF3O2	-	4	76-05-1	Tx : 50ppm
192	Trimethylamine(TMA)	C3H9N	2	2	75-50-3	Ex : 100%LEL IR : 100%LEL Tx : 100ppm
193	Trimethoxy boron(TMB)	B(OCH3)3	-	-	121-43-7	Tx : 75ppm, 500ppm
194	Trimethylsilane(TMS)	C3H10Si	-	-	993-07-7	Tx : 30ppm
195	Trisilane	Si3H8	-	-	7783-26-8	Tx : 15ppm
196	Tungsten hexafluoride	WF6	-	-	7783-82-6	Tx : 9ppm
197	Vinyl acetate	C4H6O2	2.6	3	108-05-4	Ex : 100%LEL IR : 100%LEL
198	Vinyl chloride	C2H3Cl	3.6	2.2	75-01-4	Tx : 30ppm
199	o-Xylene	C8H10	0.9	3.7	95-47-6	Ex : 100%LEL IR : 100%LEL SC : 1000ppm



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