



CSA CHANG SUNG ACE Co., Ltd.

HEADQUARTER

302, C Dong, 253, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

FACTORY

207-2, E Dong, 700, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Tel : 031-781-1400 Fax : 031-781-2337 E-mail : csa@csa-fire.com

CSA CHANG SUNG ACE Co., Ltd.

The high-tech Changsung's Product protects life and properties from fire and disaster anytime, anywhere.

Chang Sung Ace **GAS DETECTOR**



www.csa-fire.com



With the advent of the new generation, Chang Sung Ace Co., LTD. is growing into a company specializing in semiconductor equipment safety fire extinguishing systems and IT system for disaster prevention based on AI (Artificial Intelligence), big data, and IoT convergence technologies.



H I S T O R Y

- 1989.12 Establishment of a corporation
- 1998.03 Establishment of a research institute affiliated with the enterprise
- 2000.12 Certification of venture companies
- 2004.12 "2004 Digital Innovation Grand Prize" hosted by the Ministry of Trade, Industry and Energy and the Small and Medium Business Administration
- 2006.06 Selected as "The Promising Export SME" and "INNO-BIZ" by the Small and Medium Business Administration
- 2006.09 Selected as "Promising Small and Medium-sized Enterprises" by Gyeonggi-do Province
- 2009.06 Received the Presidential Commendation at the 1st Fire Fighting Industry Awards
- 2010.06 Selected as Technology Innovation-type Technology Development Project by the Small and Medium Business Administration
- 2014.12 Received "Tower of \$3 Million Export" on the Trade Day
- 2017.08 Acquisition of FM certification of the flame detector (FM Approval)
- 2018.07 ISO9001, 14001 Certification
- 2018.12 Acquisition of IECEx explosion-proof certification for flame detector
- 2019.01 Selected as "Youth Friendly Small Enterprises" by the Ministry of Employment and Labor
- 2019.06 Selected as "Excellent job company" by Gyeonggi-do province
- 2019.06 KOSHA18001 Certification (Korea Industrial Safety Corporation)
- 2019.07 Flame Detector EN54-10 Certification (FM Approval)
- 2019.07 Gas supply manufacturing business license
- 2020.01 Kumho Engineering & Construction partner registration
- 2020.01 Passed the design stage inspection by Korea Gas Safety Corporation
- 2020.05 KEPCO KPS partner registration
- 2020.06 KCC E&C partner registration
- 2021.08 Type approval of automatic fire extinguishing device for the residential kitchen (for the gas stove)
- 2021.10 Type approval of automatic fire extinguishing device for the residential kitchen (for an electric stove)
- 2021.11 Booyoung Housing partner registration
- 2021.12 Received "Tower of \$5 Million Export" on the Trade Day

Smart Diffusion Type Combustible Gas Detector CSG1000F



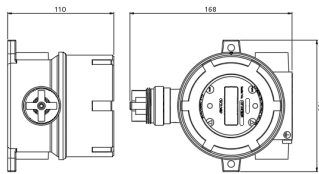
● Product Overview

CSG1000F is a gas detector to prevent industrial accidents in advance and to take prompt action by early detection of combustible gas leak from various facilities or storage

● Main Features

- Built-in magnetic sensor allows user to set the function with a magnetic pen
- Does not respond to gases other than measurements
- Standard gas injection makes it easy to inspect/calibrate for one person
- Can be installed in hazardous areas
- Built-in protection circuit
- Easy additional installation and maintenance
- Provides SPST relay output to receive 3 relay signals for notification 1, notification 2, and error signal
- Provides 4-20mA current output signal

DIMENSION (Unit : mm)



ACCESSORIES



Cable Gland

RS-485 & HART Module

Splash Guard

Mounting Bracket

SPECIFICATION

Model Name	CSG1000F
Measuring type	Atmospheric diffusion type
Measuring gas	LPG, LNG, H2, CH4, C3H8, C4H10
Response time	T90 < 15Sec
Measuring range	0~100% LEL, Full scale
Accuracy	±3% / Full scale
Output signal	4~20mA, Relay
Communication (Optional)	RS-485, HART, RF
Approvals	IECEX, ATEX, KCs, CE, KC, CPA, NEPSI
Dimension	(W)136mm x (D)110mm x (H)168mm
Body weight	Aluminium(1.4kg), Stainless(3.9kg)
Explosion-proof	Flame proof (Ex d IIC T6, T5, Ex tb IIIC T75°C, T85°C)
Operating temperature	-40°C~70°C : T6(d) / T75°C(tb) -40°C~80°C : T5(d) / T85°C(tb)
Operating humidity	5~95% RH(non-condensing)
Rated voltage	DC24V(18~32V), 70mA
Entries	M20 x 1.5P, M25 x 1.5P, 1/2"NPT, 3/4"NPT



Transmission Output Diffusion Type Combustible Gas Detector

CSG1001F

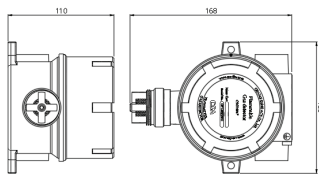
● Product Overview

CSG1001F is a gas detector to prevent industrial accidents in advance and to take prompt action by early detection of combustible gas leak from various facilities or storage

● Main Features

- Does not respond to gases other than measurements
- Standard gas injection makes it easy to inspect/calibrate for one person
- Can be installed in hazardous areas
- Easy additional installation and maintenance
- Provides 4-20mA current output signal

DIMENSION (Unit : mm)



ACCESSORIES



Cable Gland



Splash Guard



Mounting
Bracket

SPECIFICATION

Model Name	CSG1001F
Measuring type	Atmospheric diffusion type
Measuring gas	LPG, LNG, H ₂ , CH ₄ , C ₃ H ₈ , C ₄ H ₁₀
Response time	T ₉₀ < 15Sec
Measuring range	0~100% LEL, Full scale
Accuracy	±3% / Full scale
Output signal	4~20mA
Communication (Optional)	RS-485, HART, RF
Approvals	IECEX, ATEX, KCs, CE, KFI, KC, NEPSI
Dimension	(W)136mm x (D)110mm x (H)168mm
Body weight	Aluminium(1.4kg), Stainless(3.9kg)
Explosion-proof	Flame proof (Ex d IIC T ₆ , T ₅ , Ex tb IIIC T ₇₅ °C, T ₈₅ °C)
Operating temperature	-40°C~70°C : T ₆ (d) / T ₇₅ °C(tb) -40°C~80°C : T ₅ (d) / T ₈₅ °C(tb)
Operating humidity	5~95% RH(non-condensing)
Rated voltage	DC24V(18~32V), 70mA
Entries	M20 x 1.5P, M25 x 1.5P, 1/2"NPT, 3/4"NPT

Smart Diffusion Type Toxic Gas Detector CSG2000Tx



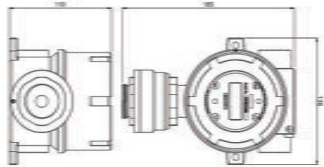
● Product Overview

CSG2000Tx is a gas detector to prevent industrial accidents in advance and to take prompt action by early detection of toxic gas leak from various facilities or storage

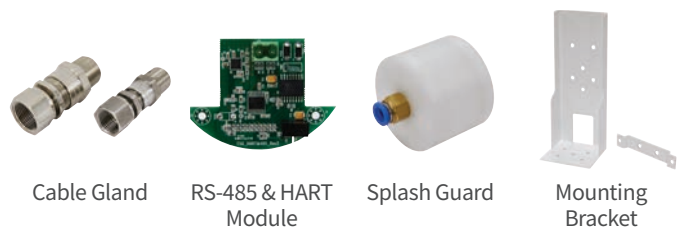
● Main Features

- Built-in magnetic sensor allows user to set the function with the magnetic pen
- Does not respond to gases other than measurements
- Standard gas injection makes it easy to test/calibrate for one person
- Can be installed in hazardous areas
- Built-in protection circuit
- Easy additional installation and maintenance
- Provides SPST relay output to alarm 1, alarm 2, and error signal
- Can receive 3 relay signals

DIMENSION (Unit : mm)



ACCESSORIES



Cable Gland

RS-485 & HART Module

Splash Guard

Mounting Bracket

SPECIFICATION

Model Name	CSG2000Tx
Measuring type	Atmospheric diffusion type
Measuring gas	Toxic gas (H2S, CL2, O2, NH3 etc.)
Response time	T90 < 60Sec
Measuring range	0~ ppm, Full scale
Accuracy	< 3% / Full range
Sensor output	4~20mA
Approvals	IECEX, ATEX, KCs, CE
Dimensions	(W)136mm x (D)110mm x (H)185mm
Body weight	Aluminium(1.4kg), Stainless(3.9kg)
Explosion-proof	Flame proof (Ex d IIC T6, T5, Ex tb IIIC T75°C, T85°C)
Operating temperature	-40°C~70°C : T6(d) / T75°C(tb) -40°C~80°C : T5(d) / T85°C(tb)
Operating humidity	5~95% RH
Rated voltage	DC24V(18~32V), 70mA
Entries	M20 x 1.5P, M25 x 1.5P, 1/2" NPT, 3/4" NPT



Transmission Output Diffusion Type Toxic Gas Detector

CSG2001Tx

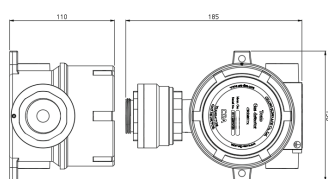
● Product Overview

CSG2001Tx is a toxic gas detector to prevent industrial accidents in advance and to take prompt action by early detection of toxic gas leak from various facilities or storage

● Main Features

- Does not respond to gases other than measurements.
- Standard gas injection makes it easy to test/calibrate for one person
- Can be installed in hazardous areas
- Easy additional installation and maintenance
- Provides 4-20mA current output signal

DIMENSION (Unit : mm)



ACCESSORIES



Cable Gland



Splash Guard



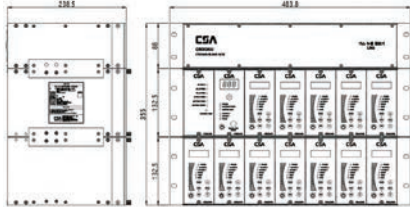
Mounting
Bracket

SPECIFICATION

Model Name	CSG2001Tx
Measuring type	Atmospheric diffusion type
Measuring gas	Toxic gas (H ₂ S, CL ₂ , O ₂ , NH ₃ etc.)
Response time	T ₉₀ < 60Sec
Measuring range	0~ ppm, Full scale
Accuracy	< 3% / Full range
Sensor output	4~20mA
Approvals	IECEX, ATEX, KCs, CE
Dimensions	(W)136mm x (D)110mm x (H)185mm
Body weight	Aluminium(1.4kg), Stainless(3.9kg)
Explosion-proof	Flame proof (Ex d IIC T ₆ , T ₅ , Ex tb IIIC T ₇₅ °C, T ₈₅ °C)
Operating temperature	-40°C~70°C : T ₆ (d) / T ₇₅ °C(tb) -40°C~80°C : T ₅ (d) / T ₈₅ °C(tb)
Operating humidity	5~95% RH
Rated voltage	DC24V(18~32V), 70mA
Entries	M20 x 1.5P, M25 x 1.5P, 1/2" NPT, 3/4" NPT

Gas Detector Receiver CSGC500

DIMENSION (Unit : mm)



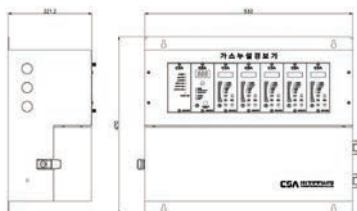
SPECIFICATION

Classification	Power Unit	Alarm Unit	Channel Unit
Input power	AC 110V/220V 50/60Hz		
Output power	DC24V/2A		
Backup power supply	Ni-Cd Battery DC24V/2400mAh		
Operating power		DC24V/100mA MAX	DC24V/150mA MAX
Input signal			Analog 4-20mA (2Wire or 3Wire)
Measurement indication			2x16 LCD & LED Bar-Graph (20Seg, 3Color)
Measuring range			0~10000 (User Settings)
Decimal points display			MAX 4points
Accuracy			±1% Full Scale
Power indication	GREEN Color LED	GREEN Color LED	GREEN Color LED
Status indication		2-LED(BATT, BATT-FAULT), 3-Digit FND)	2-LED(TEST, COM)
Alarm indication		3-LED(ALARM2, ALARM1, FAULT), BUZZER(90dB or more)	3-LED(ALARM2, ALARM1, FAULT)
Alarm level			0~High Scale (User Settings)
Alarm delay			0~99 sec. (User Settings)
Alarm output		AC250V 5A, DC30V 5A Relay contact(SPDT), BUZZER	AC250V 5A, DC30V 5A Relay contact(SPDT)
Measurement output			Analog 4-20mA RS-485 (MODBUS RTU)
Reset signal			Reset switch
Control input		BUZZER battery/return switch	
Fuse monitoring	4-LED(AC,DC,BATTERY)		
Spare Power Monitoring	GREEN/RED 2Color LED		
Preliminary power test	TEST switch		
External structure	19" (8U) Unit - Aluminum, system enclosure - Aluminum		
Expansion structure	Slide Card Type		
Operating temperature	-20°C ~ 75°C		
Storage temperature	-20°C ~ 75°C		
Operating humidity	5~99% RH(Non-condensing)		
Certification	KC / KFI / CE		

Gas Detector Receiver

CSGC500W

DIMENSION (Unit : mm)

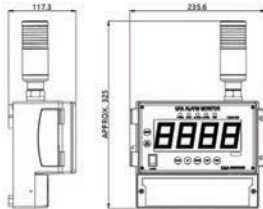


SPECIFICATION

Classification	Power Unit	Alarm Unit	Channel Unit
Input power	AC 110V/220V 50/60Hz		
Output power	DC24V/2A		
Backup power supply	Ni-Cd Battery DC24V/2400mAh		
Operating power		DC24V/100mA MAX	DC24V/150mA MAX
Input signal			Analog 4-20mA (2Wire or 3Wire)
Measurement indication			2x16 LCD & LED Bar-Graph (20Seg, 3Color)
Measuring range			0~10000 (User Settings)
Decimal points display			MAX 4points
Accuracy			±1% Full Scale
Power indication	GREEN Color LED	GREEN Color LED	GREEN Color LED
Status indication		2-LED(BATT, BATT-FAULT), 3-Digit FND)	2-LED(TEST, COM)
Alarm indication		3-LED(ALARM2, ALARM1, FAULT), BUZZER(90dB or more)	3-LED(ALARM2, ALARM1, FAULT)
Alarm level			0~High Scale (User Settings)
Alarm delay			0~99 sec. (User Settings)
Alarm output		AC250V 5A, DC30V 5A Relay contact(SPDT), BUZZER	AC250V 5A, DC30V 5A Relay contact(SPDT)
Measurement output			Analog 4-20mA RS-485 (MODBUS RTU)
Reset signal		Reset switch	Reset switch
Control input		BUZZER battery/return switch	
Fuse monitoring	4-LED(AC,DC,BATTERY)		
Spare Power Monitoring	GREEN/RED 2Color LED		
Preliminary power test	TEST switch		
External structure		Wall Mount Type	
Expansion structure		Slide Card Type	
Operating temperature		-20°C ~ 50°C	
Storage temperature		-20°C ~ 50°C	
Operating humidity		5~99% RH(Non-condensing)	
Certification		KC	

Gas Detector Receiver CSGC550

DIMENSION (Unit : mm)



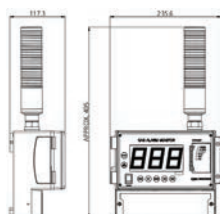
SPECIFICATION

Classification	Channel Unit
Input power	AC 110V/220V 50/60Hz
Output power	DC24V/0.7A
Operating voltage	DC24V
Input signal	Analog 4-20mA (2Wire or 3Wire)
Measurement display	4Digit FND
Measuring range	0~9999 (User settings)
Decimal points display	MAX 3points
Accuracy	±1% Full Scale
Power indication	GREEN Color LED
Alarm indication	3-LED (ALARM2, ALARM1, FAULT), BUZZER(90dB or more)
Alarm level	0~High Scale (User settings)
Alarm delay	0~99 seconds (User settings)
Alarm output	AC250V 5A, DC30V 5A relay contact(SPDT)
Measurement output	Analog 4-20mA, RS485 (MODBUS RTU)
Reset signal	Reset switch
Control input	BUZZER stop/return switch
Installation method	Wall Mount
Material	PC
Operating temperature	-20°C ~ 60°C
Storage temperature	-20°C ~ 60°C
Operating humidity	5~99% RH(Non-condensing)
Certification	CE

Gas Detector Receiver

CSGC551

DIMENSION (Unit : mm)



SPECIFICATION

Classification	Channel Unit
Input power	AC 110V/220V 50/60Hz
Output power	DC24V/0.7A
Operating voltage	DC24V
Input signal	Analog 4-20mA (2Wire or 3Wire)
Measurement display	3Digit FND, 3Color LED Bar Graph
Measuring range	0~9999 (User settings)
Decimal points display	MAX 3points
Accuracy	±1% Full Scale
Power indication	GREEN Color LED
Alarm indication	3-LED (ALARM2, ALARM1, FAULT), BUZZER(90dB or more)
Alarm level	0~High Scale (User settings)
Alarm delay	0~99 seconds (User settings)
Alarm output	AC250V 5A, DC30V 5A relay contact(SPDT)
Measurement output	Analog 4-20mA, RS485 (MODBUS RTU)
Reset signal	Reset switch
Control input	BUZZER stop/return switch
Installation method	Wall Mount
Material	PC
Operating temperature	-20°C ~ 60°C
Storage temperature	-20°C ~ 60°C
Operating humidity	5~99% RH(Non-condensing)
Certification	CE

Non-explosion-proof Suction Type Combustible Gas Detector

CSG777



Product Overview

CSG777 is a sampling type gas detector that is installed in areas where there is a risk of gas leak. It detects gas leak at all times and displays measurements on the LCD.

Main Features

- Provides analog 4-20mA standard output, RS-485 communication and relay Contact Signal
- CSG777's Case has Steel Structure
- It can be installed in areas where gas leak is at risk and TFT-LCD on the gas detector indicates the measurements of gas leakage in the field
- The sensor is detachable in the form of a cartridge, making it easy for the user to replace it

ACCESSORIES

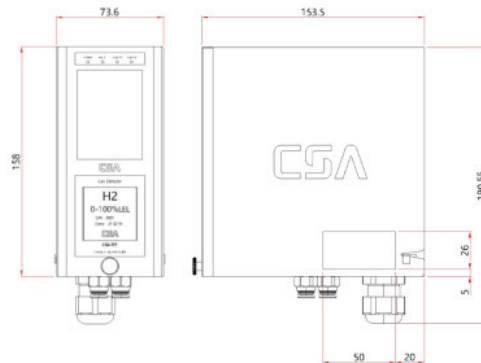


Micro Filter

Sensor Cartridge

Mounting Bracket

DIMENSION (Unit : mm)



SPECIFICATION

Model Name	CSG777
Measuring gas	Flammable Gases (LNG, LPG, H2, CH4 & etc.)
Measuring type	Auto Sampling Type
Measuring method	Catalytic Cell
Measuring range	0-100% LEL
Response time	<40 Sec
Accuracy	±3% / Full Scale
Parameter control	Touch
Operation mode display	4-LED (Power, 2-Status Alarm, 1-Fault)
Measuring value display	2.8" TFT LCD
Alarm signal output	1A@24VDC, 0.5A@125AVC / 3-SPST Relay Contact (2 Alarm, 1 Fault)
Output signal	4-20mA DC / RS-485 Modbus
Sampling method	Diaphragm Pump
Sampling line	OD 1/4"
Flow rate	0-1000 ml
Conduit connection	Cable Gland(PG-16)
Installation method	Wall Mount
Operating voltage	DC 24V ±10%
Operating temperature	0 °C ~ 40 °C
Storage temperature	-20 °C ~ 60 °C
Operating humidity	5 to 99% RH (Non-condensing)
Material	ABS, Steel
Dimensions	73.6(W) x 158(H) x 153.5(D) mm
Body weight	1.6 kg
Certification	CE

Non-explosion-proof Suction Type Toxic Gas Detector

CSG777



Product Overview

CSG777 is a sampling type gas detector that is installed in areas where there is a risk of gas leak. It detects gas leak at all times and displays measurements on the LCD.

Main Features

- Provides analog 4-20mA standard output, RS-485 communication and relay Contact Signal
- CSG777's Case has Steel Structure
- It can be installed in areas where gas leak is at risk and TFT-LCD on the gas detector indicates the measurements of gas leakage in the field
- The sensor is detachable in the form of a cartridge configured for easy user interchange

ACCESSORIES



Micro Filter



Sensor Cartridge

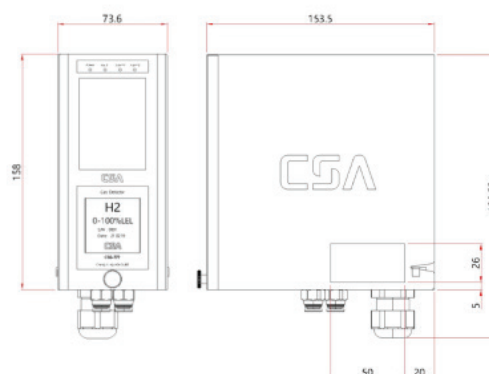


CSHC100



Mounting Bracket

DIMENSION (Unit : mm)



SPECIFICATION

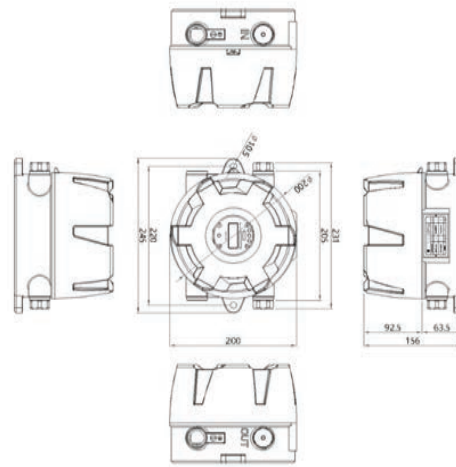
Model Name	CSG777	
Measuring gas	O ₂	Toxic Gases
Measuring type	Auto Sampling Type	
Measuring method	Galvanic Cell	Electrochemical Cell
Measuring range	0-30.0% VOL	Depending on gas
Response time	Depending on gas type	
Accuracy	±3% / Full Scale	
Parameter control	Touch	
Operation mode display	4-LED (Power, 2-Status Alarm, 1-Fault)	
Measuring value display	2.8" TFT LCD	
Alarm signal output	1A@24VDC, 0.5A@125AVC / 3-SPST Relay Contact (2 Alarm, 1 Fault)	
Output signal	4-20mA DC / RS-485 Modbus	
Sampling method	Diaphragm Pump	
Sampling line	OD 1/4"	
Flow rate	0-1000 ml	
Conduit connection	Cable Gland(PG-16)	
Installation method	Wall Mount	
Operating voltage	DC 24V ±10%	
Operating temperature	0 °C ~ 40 °C	
Storage temperature	-20 °C ~ 60 °C	
Operating humidity	5 to 99% RH (Non-condensing)	
Material	ABS, Steel	
Dimensions	73.6(W) x 158(H) x 153.5(D) mm	
Body weight	1.6 kg	
Certification	CE	

Explosion-proof Suction Type Combustible Gas Detector

CSG3000



DIMENSION (Unit : mm)



Product Overview

CSG3000 is an auto sampling type gas detector that is installed in areas where gas leak is at risk. When gas leak is detected continuously through the internal Diaphragm Pump and reach the critical level, it alerts to remote locations by generating primary and secondary alarms.

Main Features

- CSG3000 is designed as an explosion-proof structure for installation in hazardous areas
- Controls various input/output devices by inserting microprocessors inside
- Industrial standard current loop (4-20 mA) and relay contact signal, RS-485, Ethernet (Modbus protocol) for remote verification depending on the installation environment available by connecting communications
- Easy sensor concentration calibration

ACCESSORIES



Cable Gland



Male Connector



Micro Filter



Mounting Bracket

SPECIFICATION

Model Name	CSG3000
Measuring gas	Flammable Gases (LNG, LPG, H2, CH4 & etc.)
Measuring type	Auto Sampling Type
Measuring method	Catalytic Cell
Response time	<40 Sec
Accuracy	±3% / Full Scale
Parameter control	Magnetic
Operation Mode Display	4-LED (Power, 2-Status Alarm, 1-Fault)
Measuring value display	16*2" CLCD
Alarm signal output	1A@24VDC, 0.5A@125AVC / 3-SPST Relay Contact (2 Alarm, 1 Fault)
Output signal	4-20mA DC / RS-485 Modbus
Sampling method	Diaphragm Pump
Sampling line	1/4" Tube
Flow rate	0-1000 ml/min
Conduit connection	G(PF)3/4", 3/4"NPT, M25x1.5P
Installation method	Wall Mount
Operating voltage (Standard)	DC 24V ±10%
Operating voltage (PoE)	48 VDC Power-over-Ethernet (IEEE 802.3af compliant)
Transmission Speed (PoE)	10BaseT/100BaseTX Ethernet PHY
Operating temperature	-10°C ~ 50 °C
Operating humidity	5 to 99% RH (Non-condensing)
Certification	KC / CE / KCs

Explosion-proof Suction Type Toxic Gas Detector

CSG3000



Product Overview

CSG3000 is an auto sampling type gas detector that is installed in areas where gas leak is at risk. When gas leak is detected continuously through the internal Diaphragm Pump and reach the critical level, it alerts to remote locations by generating primary and secondary alarms.

Main Features

- CSG3000 is designed as an explosion-proof structure for installation in hazardous areas
- Controls various input/output devices by inserting microprocessors inside
- Industrial standard current loops (4-20 mA) and relay contact signals, RS-485, and Ethernet (Modbus protocol) communications can be connected for remote verification depending on the installation environment
- Easy sensor concentration calibration

ACCESSORIES



Cable Gland



Male Connector

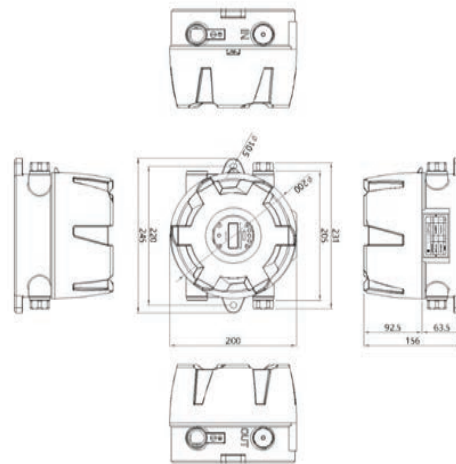


Micro Filter



Mounting Bracket

DIMENSION (Unit : mm)



SPECIFICATION

Model Name	CSG3000	
Measuring gas	O ₂	Toxic Gases
Measuring type	Auto Sampling Type	
Measuring method	Catalytic Cell	Electrochemical Cell
Response time	0-30.0% VOL	Depending on gas
Accuracy	±3% / Full Scale	
Parameter control	Magnetic	
Operation Mode Display	4-LED (Power, 2-Status Alarm, 1-Fault)	
Measuring value display	16*2" CLCD	
Alarm signal output	1A@24VDC, 0.5A@125AVC / 3-SPST Relay Contact (2 Alarm, 1 Fault)	
Output signal	4-20mA DC / RS-485 Modbus / PoE Interface(Optional)	
Sampling method	Diaphragm Pump	
Sampling line	1/4" Tube	
Flow rate	0-1000 ml/min	
Conduit connection	G(PF)3/4", 3/4"NPT, M25x1.5P	
Installation method	Wall Mount	
Operating voltage (Standard)	DC 24V ±10%	
Operating voltage (PoE)	48 VDC Power-over-Ethernet (IEEE 802.3af compliant)	
Transmission Speed (PoE)	10BaseT/100BaseTX Ethernet PHY	
Operating temperature	-10°C ~ 50 °C	
Operating humidity	5 to 99% RH (Non-condensing)	
Certification	KC / CE / KCs	