

## Calibration gas preparation device

CGS-12

This device is a calibration gas preparation device of flow rate ratio mixing type intended for calibration of atmospheric sulfur dioxide analyzer, nitrogen oxide analyzer, carbon monoxide analyzer.

Built-in zero gas generator, suction the atmosphere and refine it to zero gas. The flow rate of the dilution gas (zero gas) is measured with a thermal flow meter, and the dilution ratio is made constant by our proprietary technology that controls the flow rate from the pressure and temperature of the component gas (standard gas). The concentration of span gas (calibration gas) can be arbitrarily set between 1/100 and 1 / 10,000 of the component gas concentration.

Moreover, it can automatically generate arbitrary time, arbitrary concentration, span gas by setting the program.

The enclosure is portable.

Automatic calibration can be supported by using the optional network interface or contact input interface. At this time, by using the component gas switching unit, it is possible to switch the gas of three components.



## Features

**○Zero Gas Generator Built-in**

The air is sucked with the built-in pump, dehumidified and purified to make it zero gas.

**○Zero gas and span gas can be generated with a single touch**

Zero gas can be generated with zero key and span gas can be generated simply by pressing span key.

**○Span gas with good concentration can be obtained.**

Set the span gas concentration. Calculation of dilution ratio is not necessary. Even if the component gas concentration is an odd value, span gas with a good concentration can be obtained.

**○Density is displayed**

Digital display of the span gas concentration being generated on the display.

**○Gas test can be performed automatically by using three program functions.**

There are three functions: step mode, linearity mode, repeat mode.

1) With step mode, any density can be generated for any time up to 10 steps.

2) With linearity mode, the maximum density is arbitrarily divided and up to zero gas is generated for an arbitrary time. Linearity test can be done automatically.

3) With repeat mode, span gas and zero gas are alternately generated for an arbitrary number of times for an arbitrary number of hours.

Repeatability test can be done automatically. You can set 5 programs each.

**○The enclosure is narrow, and portable with a handle.**

### Standard specification

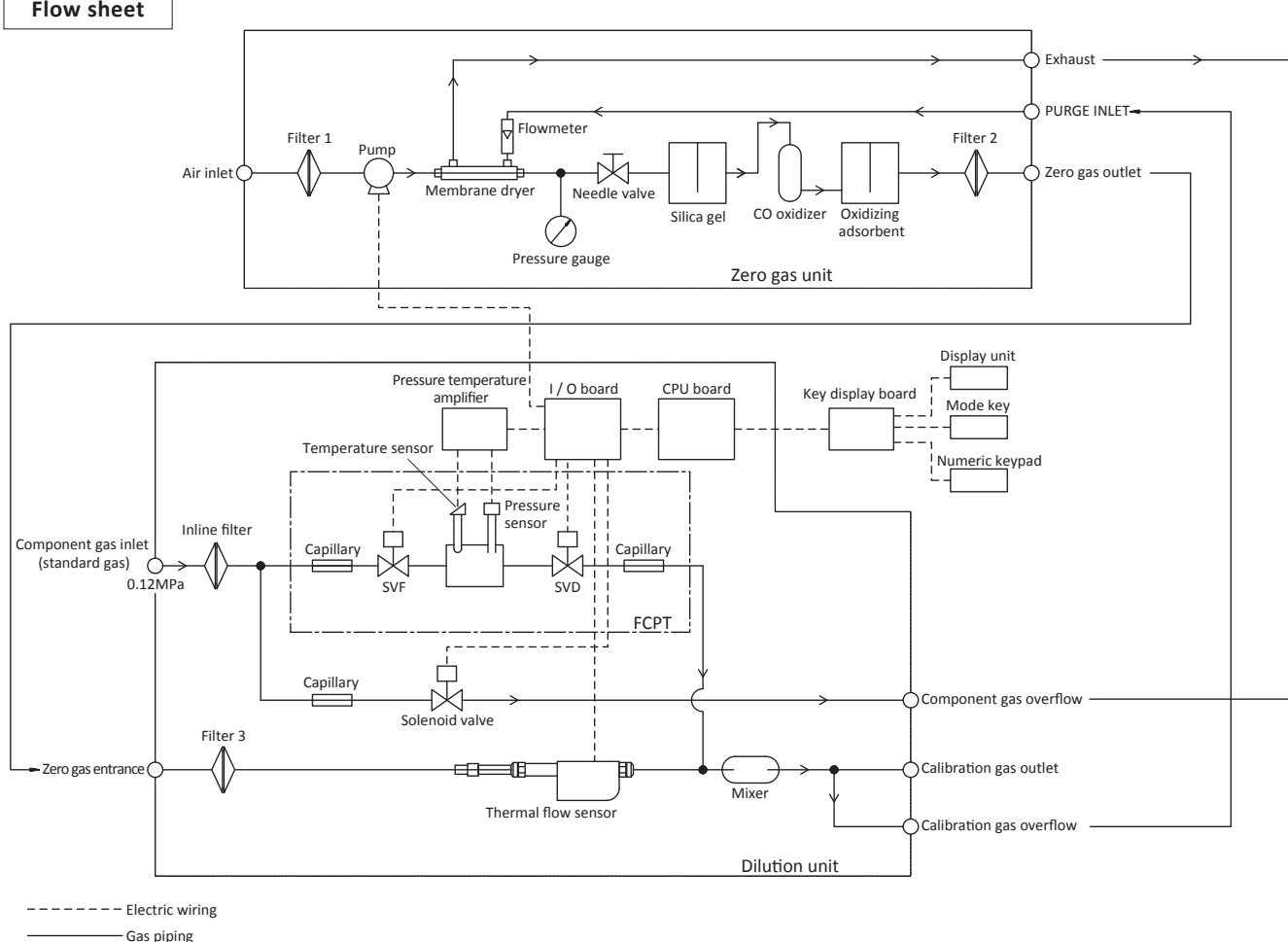
Product name : Calibration gas preparation device  
 Model name : CGS-12  
 Measurement method : Zero gas... Atmosphere refining method  
 Calibration gas... Flow rate ratio mixed method  
 Gases subject to dilution : SO<sub>2</sub>, NO, CO  
 Zero gas purity : SO<sub>2</sub>... 0.001 ppm or less  
 NOx... 0.001 ppm or less  
 CO ..... 0.05 ppm or less  
 H<sub>2</sub>O... dew point 0 °C. or less  
 Dilution ratio : 1/100 to 1 / 10,000  
 Generated concentration : 2 ppm or less (CO; 50 ppm or less)  
 Generated flow rate : 3.0±0.3L/min  
 Display method : Digital display of generated density  
 Minimum unit of generated concentration : 0.001 ppm  
 Response time : Within 60 seconds (90% response)  
 Stability : Within ± 1% / h  
 Linearity : Within ± 2%  
 Repeatability : within ± 1%  
 Influence of component gas pressure fluctuation : Concentration fluctuation within ±1% against 10% pressure fluctuation  
 Influence of power supply voltage fluctuation : Concentration fluctuation within ±1% against 10% voltage fluctuation

Influence of ambient temperature : Density fluctuation within ± 2% against temperature change of 10 °C  
 Ambient temperature : 5 to 35 °C  
 Power supply : AC 100 V, 50/60 Hz  
 Power consumption : about 150 VA  
 Piping port : Component gas inlet; PTFE φ 3 fitting or Rc 1/8  
 Calibration gas outlet; PTFEφ 6 fitting or Rc 1/8  
 Component gas exhaust; PPφ 3 fitting or φ 8 fitting or Rc 1/8  
 Exhaust; φ8 fitting  
 Atmospheric inlet; φ6 fitting  
 Painting color : Munsell 2.5 Y 6/2  
 Warm up time : 30 minutes  
 Weight : about 21 kg  
 External dimensions : Body... 207 (W) × 535 (D) × 367 (H) mm

### Option

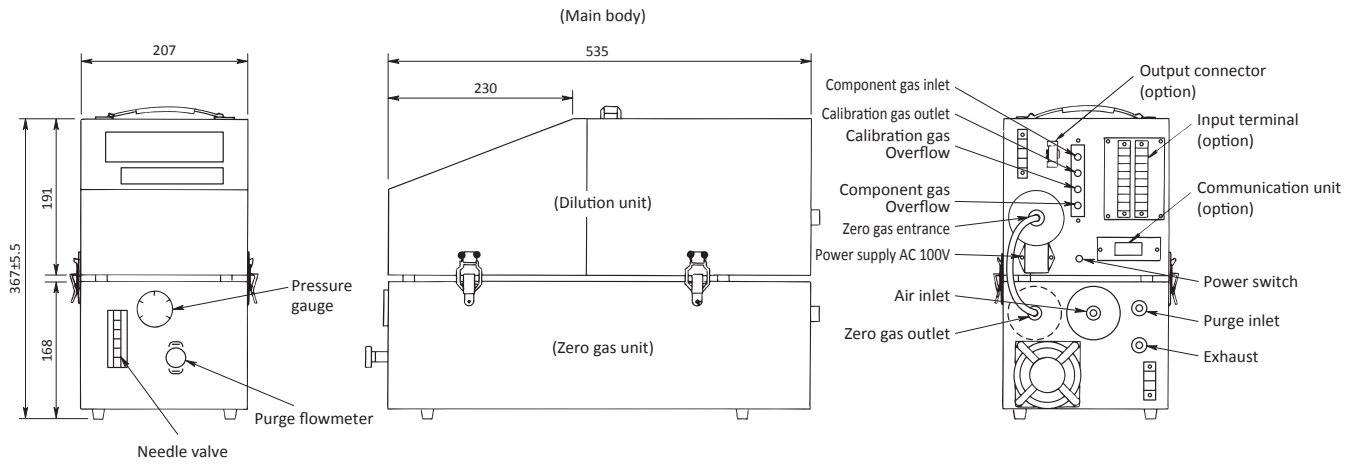
- Network interface
- Contact input interface
- Component gas switching unit

### Flow sheet



**Dimensions**

Unit : mm






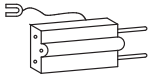








**Product code**

CGS12-0-	□	□	□	□	
1	.....	.....	.....	.....	Power supply
9	.....	.....	.....	.....	AC 100V 50/60Hz
0	.....	.....	.....	.....	Special
1	.....	.....	.....	.....	Component gas switching unit *
2	.....	.....	.....	.....	None (standard)
0	.....	.....	.....	.....	Yes (output only)
1	.....	.....	.....	.....	Yes (including switch)
0	.....	.....	.....	.....	Network interface *
1	.....	.....	.....	.....	None (standard)
0	.....	.....	.....	.....	Yes
1	.....	.....	.....	.....	Contact input interface *
0	.....	.....	.....	.....	None (standard)
1	.....	.....	.....	.....	Special
					Language
A	.....	.....	.....	.....	Japanese (Standard)
B	.....	.....	.....	.....	English
Z	.....	.....	.....	.....	Other

\* Please inquire about details of component gas switching unit, network interface, contact input interface.

Note: If the power supply voltage is other than 100 V, please order a step-down transformer separately. (Not built-in)

**Standard accessories**

No.	Code	Product	Diagram	Quantity	Remarks
1	-----	Explanation		1	
2	-----	Inspection pass certificate		1	
3	118C009	Power Code		1	
4	118C504	Adapter (for power code)		1	
5	116D003	Teflon tube (φ2×φ3 white)		5m	
6	116D012	Teflon Tube (φ4×φ6 white)		5m	
7	116E022	Hyplen tube (φ7×φ11)		10m	
8	60318500	Plug (φ3)		1	At shipment Built-in main unit
9	60318600	Plug (φ6)		4	At shipment Two built-in main unit
10	60318700	Plug (φ8)		4	At shipment One built-in main unit
11	6105360K	Exhaust tube Assy		1	At shipment Buuilt-in main unit
12	117B014	Different diameter union (φ6-φ3)		1	



**DKK-TOA CORPORATION**



Please read the operation manual carefully before using products.

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