

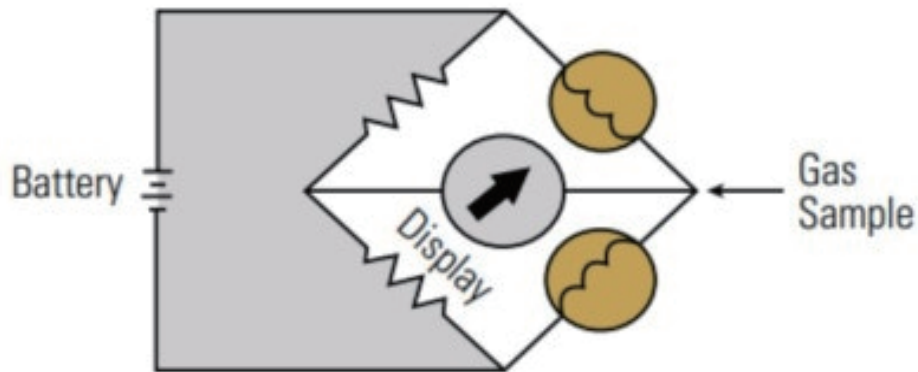
DA-600S-Catalytic



Introduction

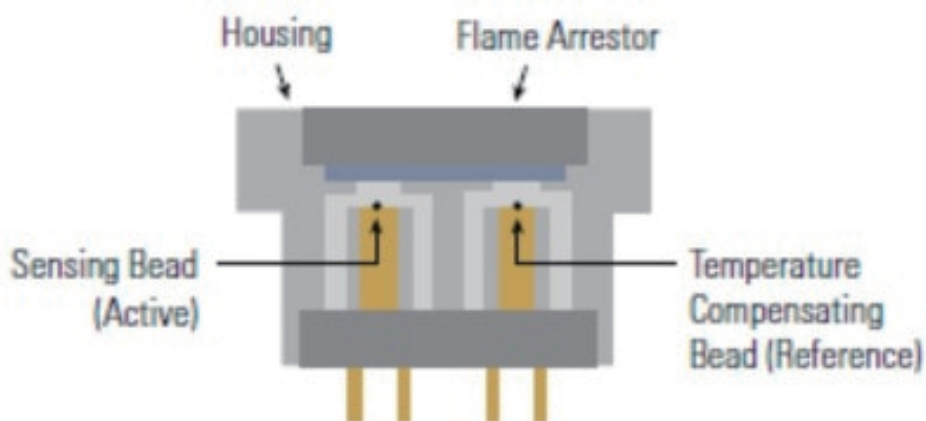
Catalytic sensors are reliable and widely used for detecting combustible gases, particularly hydrocarbons. These sensors operate on the principle of heat generation during gas oxidation. When a combustible gas reacts with oxygen, it produces heat, which is detected by the sensor and converted into a signal proportional to the gas concentration using a standard Wheatstone bridge circuit.

The sensor consists of two heating coils: an active element embedded in a catalyst and a reference element. The active element facilitates the exothermic reaction between the combustible gas and oxygen on the catalyst surface, raising the temperature. The resulting change in resistance is processed and translated into an accurate gas concentration measurement.



Wheatstone Bridge Circuit

Figure 1



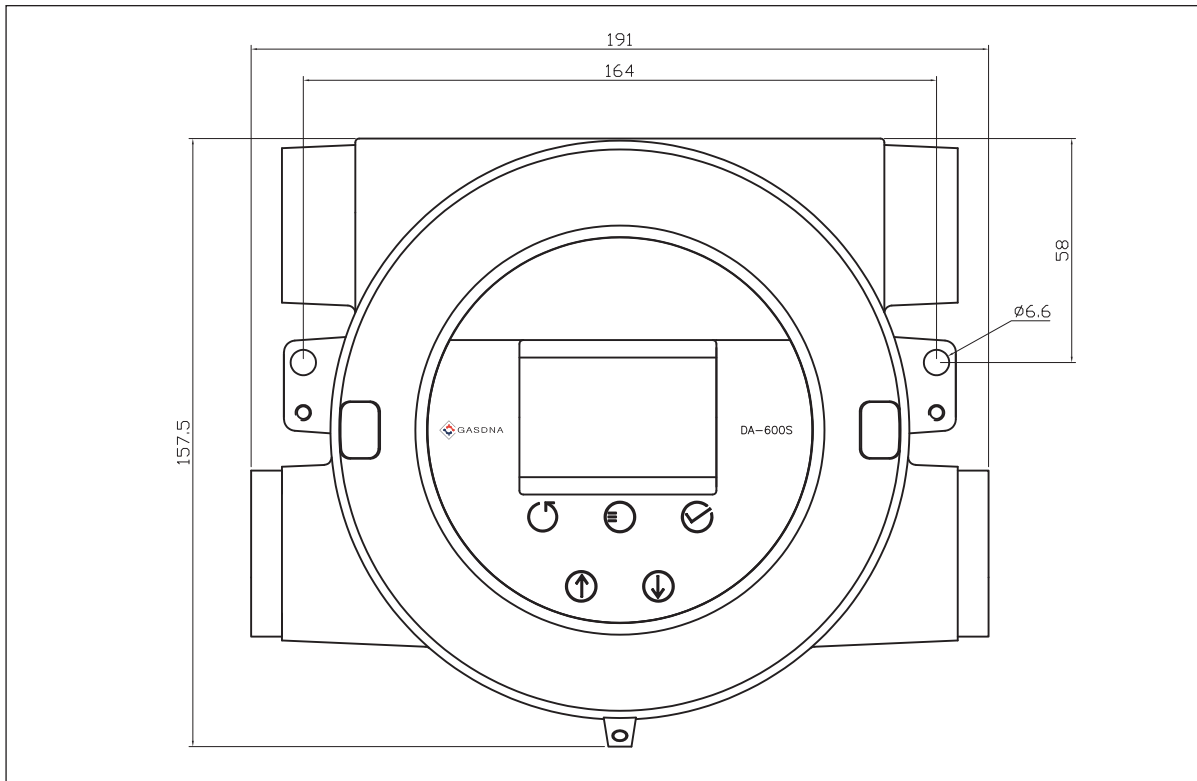
Combustible Gas Sensor

Product Specifications

Classification	Detail
Measuring Range	0~100 %LEL
Size	191(W) x 158(H) x 135(D)
Weight	3.8kg
Display	2.4" TFT LCD
Screen size	48.96mm × 36.72mm(2.4inch)
Screen display	5magnetic switches with led confirmation
Warning light	RGB Color :RED, Orange, Green
Measuring principle	Catalytic
Measuring gas	Gas list 참조
Detection Time(T90)	>25 초이내
Temperature	-40℃~55℃
Humidity	0~95%RH(Non condensing)
Mechanical interface	2 x 3/4" NPT
INPUT POWER	DC 20~30V, Maximum power of 10Watts
Outputs	4-20mA, Rs485 modbus, Relay x 2SPST(220V AC : 0.3A)
Certification	Ex db IIC T6 Gb(IP6X), Ex tb IIIC T85℃ Db(IP6X)
Measuring method	Sampling

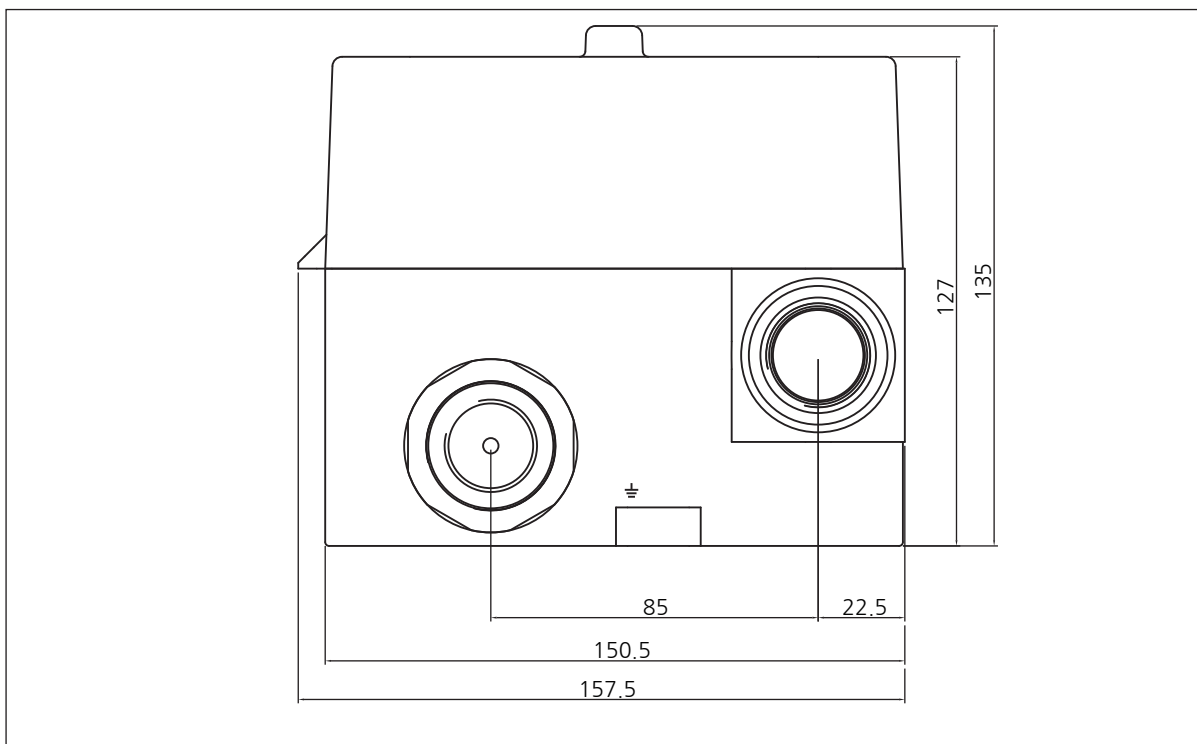
Product Diagram

1. Front View



unit : mm

2. Side View



unit : mm

Combustible Gas Detector Measurement materials List

No.	Gas Name	Molecular Formula
1	Acetaldehyde	C ₂ H ₄ O
2	Acetone	C ₃ H ₆ O
3	Acetonitrile	C ₂ H ₃ N
4	Acetylene	C ₂ H ₂
5	Acrylonitrile(AN)	C ₃ H ₃ N
6	Allyl chloride	C ₃ H ₅ Cl
7	Ammonia	NH ₃
8	n-Amyl alcohol	C ₅ H ₁₂ O
9	Benzene	C ₆ H ₆
10	1-Butene	C ₄ H ₈
11	1,2-Butadiene	C ₄ H ₆
12	2-Butanol	C ₄ H ₁₀ O
13	Isobutylene	C ₄ H ₈
14	Butene(butylene)	C ₄ H ₈
15	n-Butane	C ₄ H ₁₀
16	i-Butane	C ₄ H ₁₀
17	Butyl acetate	C ₆ H ₁₂ O ₂
18	Isobutyl acetate	C ₆ H ₁₂ O ₂
19	n-Butyl alcohol	C ₄ H ₁₀ O
20	2-Chloro-2-methylbutane	C ₅ H ₁₁ Cl
21	Cumene	C ₉ H ₁₂
22	Cyclohexane	C ₆ H ₁₂
23	Cyclopentane	C ₅ H ₁₀
24	Dibutyl ether	C ₈ H ₁₈ O
25	1,2-Dichloroethane(EDC)	C ₂ H ₄ Cl ₂
26	Diethyl carbonate (DEC)	C ₅ H ₁₀ O ₃
27	Diethyl ether(Ethyl ether)	(C ₂ H ₅) ₂ O
28	Hydrogen	H ₂
29	Diisobutylene	C ₈ H ₁₆
30	Diisopropylamine	C ₆ H ₁₅ N
31	Diisopropyl Ether	C ₆ H ₁₄ O
32	Dimethylacetamide (DMAc)	C ₄ H ₉ NO
33	Dimethylamine (DMA)	(CH ₃) ₂ NH
34	Dimethyl carbonate (DMC)	C ₃ H ₆ O ₃
35	Dimethyl Ether	C ₂ H ₆ O
36	1,4-Dioxane	C ₄ H ₈ O ₂
37	Epichlorohydrin	C ₃ H ₅ ClO
38	Ethane	C ₂ H ₆
39	Ethanol	C ₂ H ₅ OH
40	Ethyl acetate	C ₄ H ₈ O ₂
41	Ethyl acrylate	C ₅ H ₈ O ₂
42	Ethyl benzene	C ₈ H ₁₀
43	Ethylene	C ₂ H ₄
44	Ethylenediamine (EDA)	C ₂ H ₈ N ₂
45	Ethyl formate	C ₃ H ₆ O ₂
46	Ethylene glycol monomethyl ether(EGME)	C ₃ H ₈ O ₂
	= 2-methoxyethanol	
	= methyl cellosolve	
47	Ethylene oxide (EO)	C ₂ H ₄ O

Combustible Gas Detector Measurement materials List

No.	Gas Name	Molecular Formula
48	n-Heptane	C7H16
49	n-Hexane	C6H14
50	isooctyl alcohol= 2-ethyl-1-hexanol	C8H18O
51	isopropyl alcohol (IPA)	C3H8O
52	Methane	CH4
53	Methoxycyclopentane	C6H12O
54	Methyl acetate	C3H6O2
55	Methyl acrylate (MA)	C4H6O2
	= Methyl acrylate Monomer (MAM)	
56	Methyl alcohol	CH3OH
57	Methyl chloride (MC , R40)	CH3Cl
58	Methylcyclohexane (MCH)	C7H14
59	Methyl ethyl ketone (MEK)	C4H8O
60	Methyl isobutyl ketone (MIBK)	C6H12O
61	2-Methacrolein	C4H6O
62	Methyl methacrylate (MMA)	C5H8O2
63	Naphtha(Petroleum Ether)	N/A
64	N-Methyl-2-pyrrolidone (NMP)	C5H9NO
65	isoOctane	C8H18
66	n-Octane	C8H18
67	n-Pentane	C5H12
68	isoPentane	C5H12
69	Propane	C3H8
70	Propionaldehyde	C3H6O
71	n-Propyl acetate	C5H10O2
72	n-Propyl alcohol	C3H8O
73	isoPropyl acetate	C5H10O2
74	Propylene glycol monoethyl ether (PGEE)	C5H12O2
75	Propylene	C3H6
76	Propylene oxide	C3H6O
77	Propylene Glycol Monomethyl Ether (PGME)	C4H10O2
78	Propylene Glycol Monomethyl Ether Acetate (PGMEA)	C6H12O3
79	Pureti TnBT	N/A
80	Styrene (SM)	C8H8
81	Tert-butylbenzene	C10H14
82	Tetrahydrofuran(THF)	C4H8O
83	Thinner	MEK 60%Heptane 30%Toluene1.8% ...
84	Toluene	C7H8
85	Trimethylamine (TMA)	C3H9N
86	Vinyl acetate	C4H6O2
87	Vinyl chloride	C2H3Cl
88	4-Vinyl-1-cyclohexene	C8H12
89	Mixed-Xylene	C8H10
90	o-Xylene	C8H10
91	p-Xylene	C8H10