

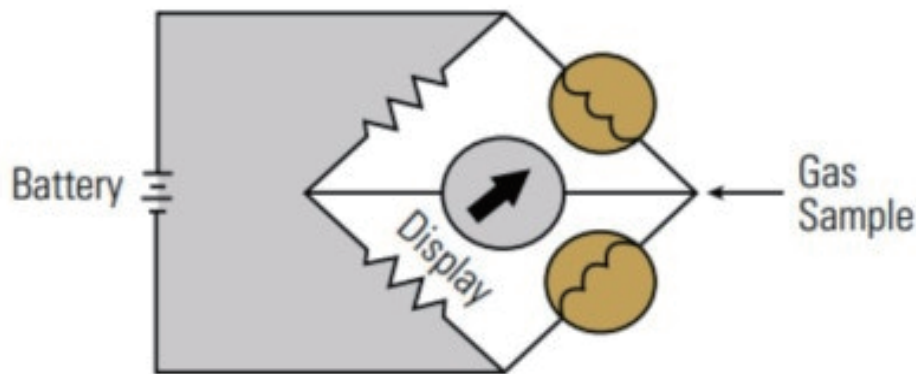
DA-600S-Catalytic



Introduction

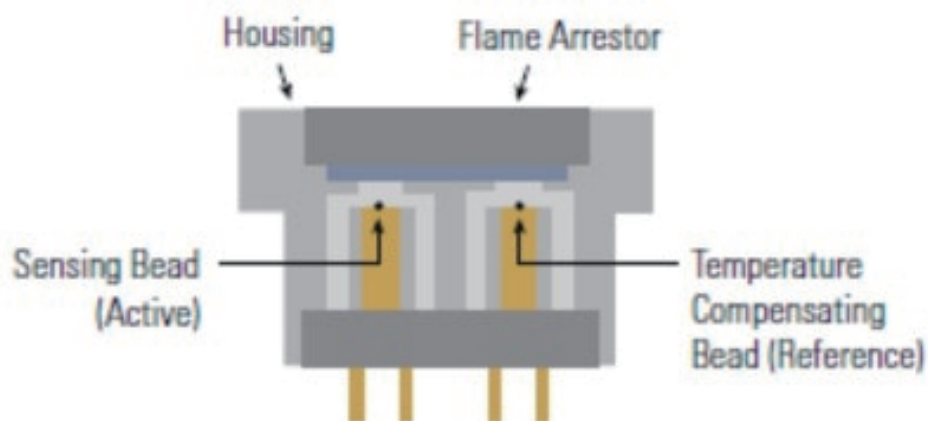
Catalytic sensors are reliable and widely used for detecting combustible gases, particularly hydrocarbons. These sensors operate on the principle of heat generation during gas oxidation. When a combustible gas reacts with oxygen, it produces heat, which is detected by the sensor and converted into a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



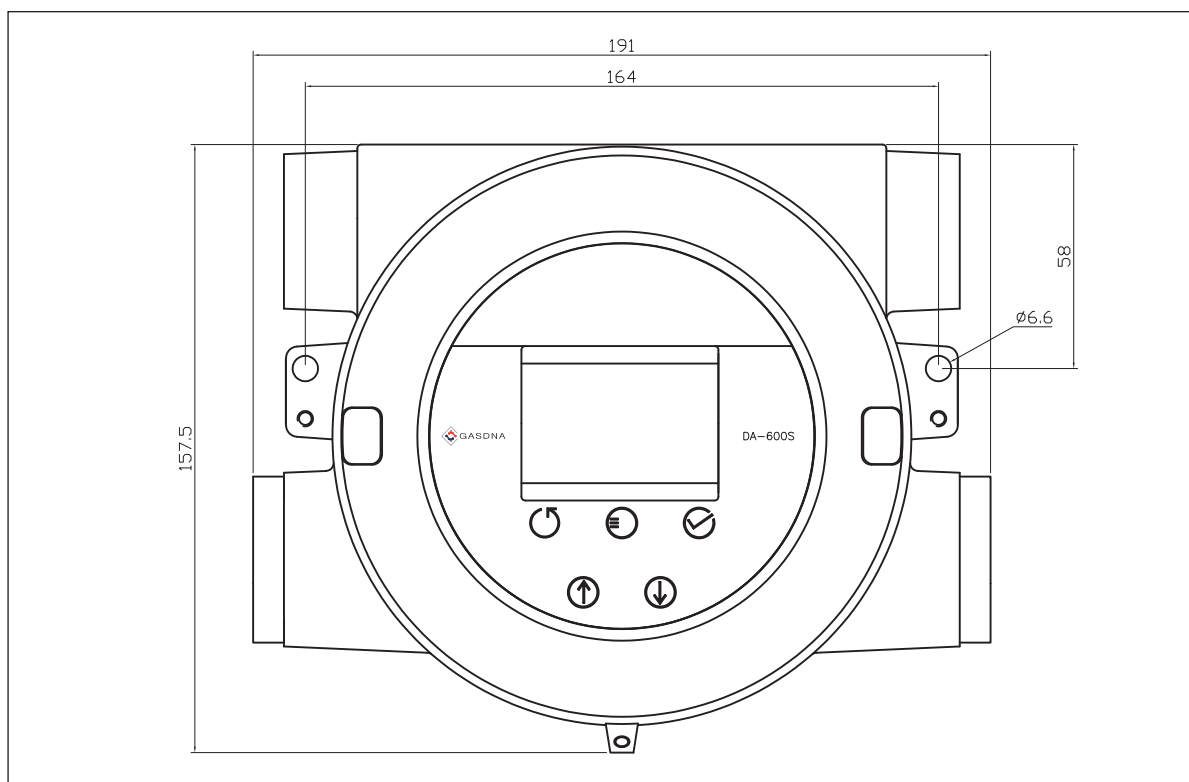
Combustible Gas Sensor

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	See the gas list
Detection Time(T90)	>25 Sec
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

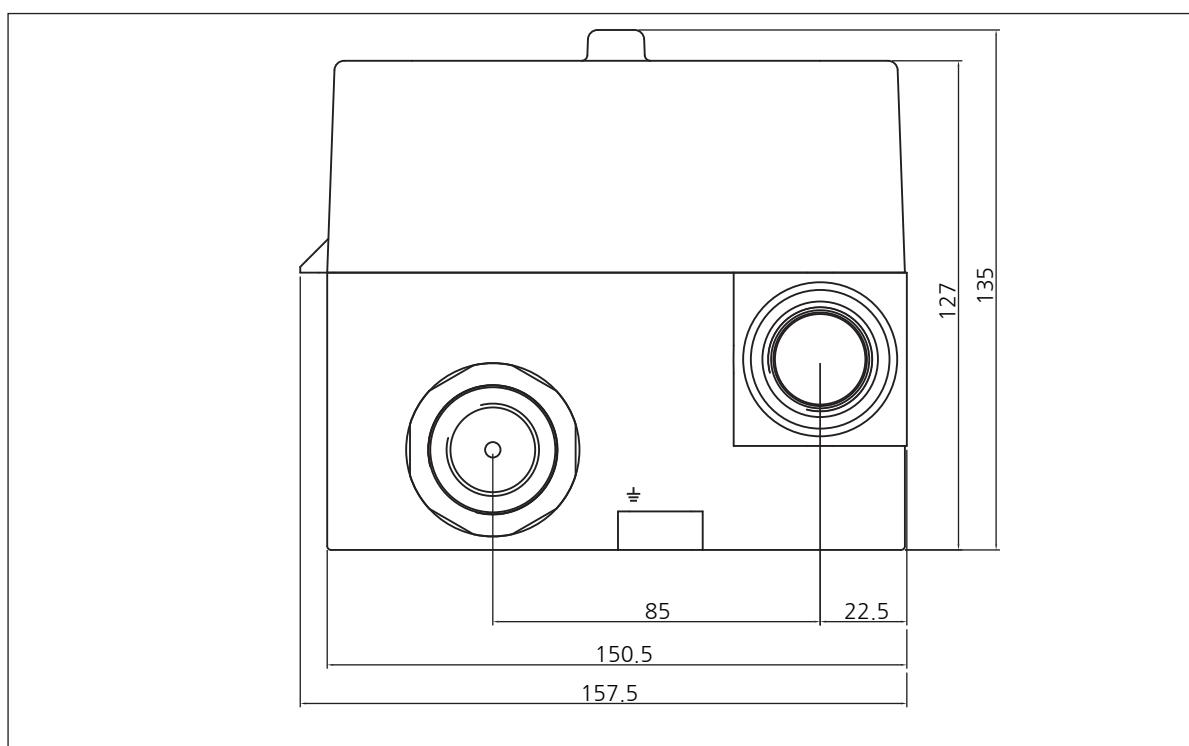
Product Diagram

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	C ₇ H ₁₆
49	n-Hexane	C ₆ H ₁₄
50	isooctyl alcohol= 2-ethyl-1-hexanol	C ₈ H ₁₈ O
51	isopropyl alcohol (IPA)	C ₃ H ₈ O
52	Methane	CH ₄
53	Methoxycyclopentane	C ₆ H ₁₂ O
54	Methyl acetate	C ₃ H ₆ O ₂
55	Methyl acrylate (MA) = Methyl acrylate Monomer (MAM)	C ₄ H ₆ O ₂
56	Methyl alcohol	CH ₃ OH
57	Methyl chloride (MC , R40)	CH ₃ Cl
58	Methylcyclohexane (MCH)	C ₇ H ₁₄
59	Methyl ethyl ketone (MEK)	C ₄ H ₈ O
60	Methyl isobutyl ketone (MIBK)	C ₆ H ₁₂ O
61	2-Methacrolein	C ₄ H ₆ O
62	Methyl methacrylate (MMA)	C ₅ H ₈ O ₂
63	Naphtha(Petroleum Ether)	N/A
64	N-Methyl-2-pyrrolidone (NMP)	C ₅ H ₉ NO
65	isoOctane	C ₈ H ₁₈
66	n-Octane	C ₈ H ₁₈
67	n-Pentane	C ₅ H ₁₂
68	isoPentane	C ₅ H ₁₂
69	Propane	C ₃ H ₈
70	Propionaldehyde	C ₃ H ₆ O
71	n-Propyl acetate	C ₅ H ₁₀ O ₂
72	n-Propyl alcohol	C ₃ H ₈ O
73	isoPropyl acetate	C ₅ H ₁₀ O ₂
74	Propylene glycol monoethyl ether (PGEE)	C ₅ H ₁₂ O ₂
75	Propylene	C ₃ H ₆
76	Propylene oxide	C ₃ H ₆ O
77	Propylene Glycol Monomethyl Ether (PGME)	C ₄ H ₁₀ O ₂
78	Propylene Glycol Monomethyl Ether Acetate (PGMEA)	C ₆ H ₁₂ O ₃
79	Pureti TnBT	N/A
80	Styrene (SM)	C ₈ H ₈
81	Tert-butylbenzene	C ₁₀ H ₁₄
82	Tetrahydrofuran(THF)	C ₄ H ₈ O
83	Thinner	MEK 60%Heptane 30%Toluene1.8% ...
84	Toluene	C ₇ H ₈
85	Trimethylamine (TMA)	C ₃ H ₉ N
86	Vinyl acetate	C ₄ H ₆ O ₂
87	Vinyl chloride	C ₂ H ₃ Cl
88	4-Vinyl-1-cyclohexene	C ₈ H ₁₂
89	Mixed-Xylene	C ₈ H ₁₀
90	o-Xylene	C ₈ H ₁₀
91	p-Xylene	C ₈ H ₁₀