TECHNICAL INFORMATION SHEET

NAP-50A Catalytic Gas Sensor, Optimised For Residential Methane / Natural Gas / LPG detectors

Nemoto Sensor Engineering Co., Ltd.
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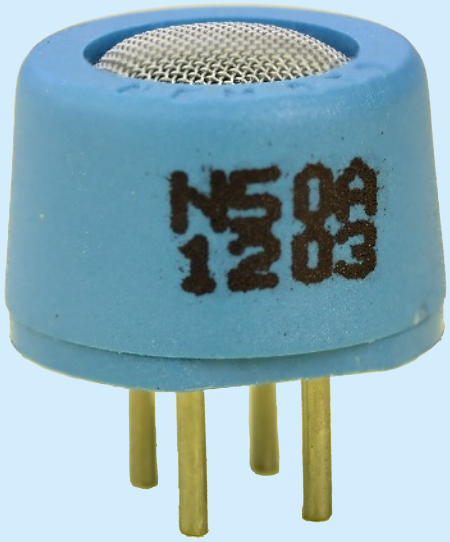
General Description

The NAP-50A Gas Sensor is a low–cost Catalytic Flammable Gas Sensor designed for the detection and measurement of Methane, Natural Gas or LPG in the range 0-50% LEL. It is a version of the original NAP-55A sensor, slightly modified to reduce the effect of potential cross sensitive gases likely to be encountered in domestic premises, particularly Ethanol, in compliance with the European standard for Residential Flammable Gas Detectors, EN50194.

The mechanism used to reduce the sensitivity to Ethanol in accordance with EN50194 can have an effect on the response to other flammable gases. The NAP-50A should therefore only be selected if high sensitivity to Natural Gas, Methane or LPG gases only is required, and the lowest cross sensitivity to other flammable gases and vapours is desirable. Where maximum sensitivity to all flammable gases is required, The NAP-55A should be used.



- **Monitors flammability directly**
- **Unaffected by humidity**
- **Very low long term drift**
- **Excellent poison resistance**
- **Single header design for ease of use**
- **Superb temperature stability**
- **Resistant to shocks and vibration**
- **Linear output to 50% LEL**

Specifications:

Detectable Gas	Methane / Natural Gas & LPG Gases
Recommended Voltage:	2.5V +/- 0.2V
Current Drawn:	170 +/- 10mA
Zero Offset:	0mV +/- 35mV
Typical Signal Sensitivity: **@20% LEL**	
Methane, 1%	37-53 mV
iso-Butane (LPG)*, 0.36%	23-36 mV
Range:	0-50% LEL
Repeatability:	+/- 0.5mV
Maximum Long Term Drift:	
Span:	< +/- 2% Signal / Month
Zero:	<+/- 2 mV / year
Response Time:	T_{90}: <10 sec
Temperature Range:	-10°C to +50°C
Humidity:	0-95%RH, non-condensing
Linearity:	Effectively Linear to 60%LEL
Expected Lifetime	5 years

* The exact composition of commercially available “LPG” gas is variable - for example it is often different in different countries. Generally, LPG is a mixture of propane, n-butane and iso-butane. For the purposes of this specification, iso-Butane is considered to be a very good approximation, and will be valid for all situations where LPG is to be detected.

Test data on drift, poisoning, temperature performance, linearity are available on the Characterisation Document.

Nemoto has a policy of continuous development and improvement of its products. As such the specification for the device outlined in the data sheet may be changed without notice

nap-50a.ppp, issue 4, May 2019

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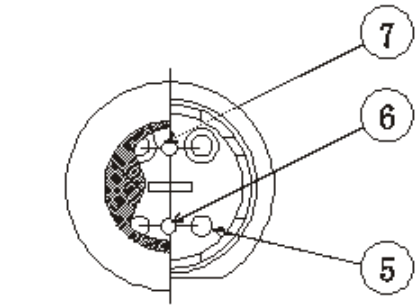
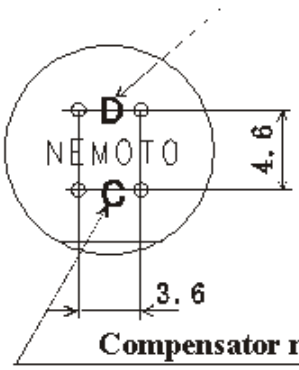
Dimensions, Materials and Recommended Circuit

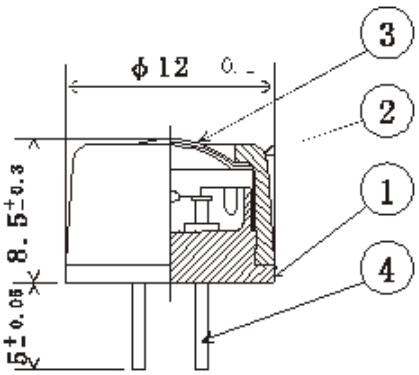
Sensor : NAP-55A



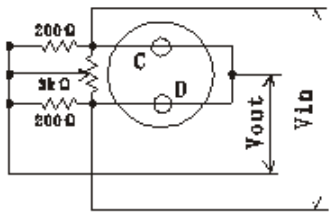
Detector mark



Compensator mark



Bottom view



Measuring Circuit

No.	Parts names	Material	Remarks
1	Mount	Nylon66	Glass 20% contained
2	Cap	Nylon66	Glass 20% contained
3	Mesh	SUS 316	#100, Doublemesh
4	Pin	Pure Ni	φ0.8
5	Coil	PPT	φ30μm
6	Compensator		Nemopto & Co.,Ltd
7	Detector		Nemopto & Co.,Ltd

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