

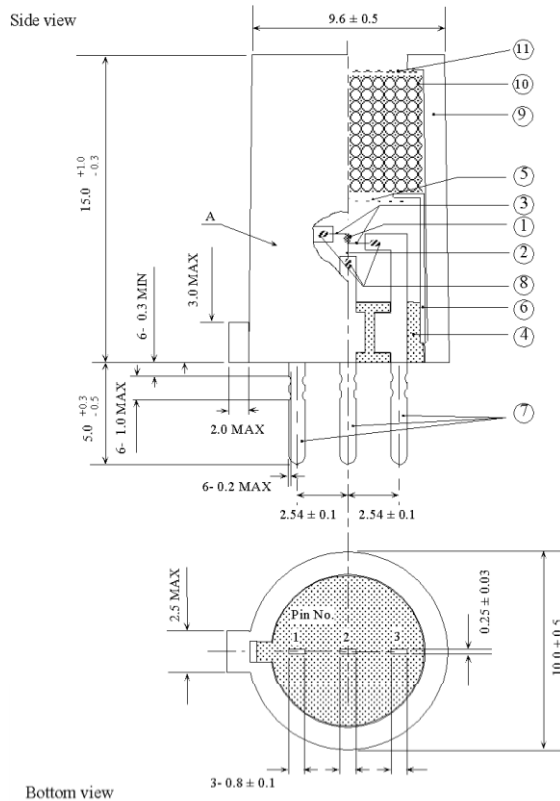
検討用資料。量産移行時に量産品番を定める。

Sample Stage This specification is for consideration. It determines a mass production model No. at the time of a mass production shift.

SB-15C-00s SPECIFICATIONS

DRAFT 1

MODEL SB-15C-00
PARTS NAME LP SENSOR
SPECIFICATION NO. S-2006-01
ISSUE DATE 18. June. 2020
APPLIED PRODUCT General customer



Document No.	Date	Name
Created	17. June. 2020	H.Kuribayashi
Designed	17. June. 2020	H.Kuribayashi
Approved	18. June. 2020	S.Matsumoto
Issue date		
N of copy	Number	Date
Customer	copy	
Distributor	copy	
FIS	2 copy	

Sign,

Customer;

Distributor;

FIS;

SPECIFICATIONS

Nissha FIS, INC.

Parts Name LP Sensor
Model SB-15C-00

Specification No.
S-2006-01

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Attachment; Product drawing

History of revisions

Ref. No.	Date	Notes	Approved	Designed
Draft1	17.Jun.2020	Making of Draft1	S.Matsumoto	H.Kuribayashi

SPECIFICATIONS

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Parts Name LP Sensor
 Model SB-15C-00

Specification No.
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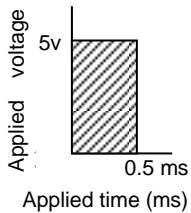
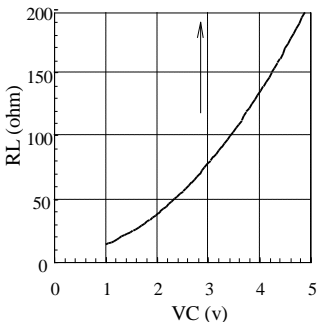
2. Application

This specification is applied to the SB-15C-00 which is designed for LP alarming devices for domestic and commercial applications.

3. Parts Name/Number

Name: LP sensor
 Model: SB-15C-00
 Customer's parts number:

4. Absolute Maximum Ratings

Parameter	Symbol	Maximum Rating	Remark
Heater Power Consumption	P_H	Maximum heater power consumption is 150mW (pin1-3) for 5seconds(during HIGH operation period)	In the case of Dynamic Driving(pulse) operation, the voltage and duration of pulse must be inside of the following range. 
Circuit Voltage	V_c	Maximum 5.5v DC	
Load Resistance	R_L	The R_L value must be chosen in the range defined by the following formula. $x=V_C, y=R_L$ $y>8x^2$ Example: $V_C=5v; R_L>200ohm$ $V_C=3v; R_L>72ohm$	$y > 8x^2$ $x=V_C, y=R_L$ 
Operating Temperature	T_{op}	-10 ~ 50°C	Condensation must be avoided.
Storage Temperature	T_{st}	-20 ~ 60°C	Condensation must be avoided.
Note		Avoid any contamination of filter by organic solvents (e.g. isopropyl alcohol) and silicon compound (e.g. epoxy).	

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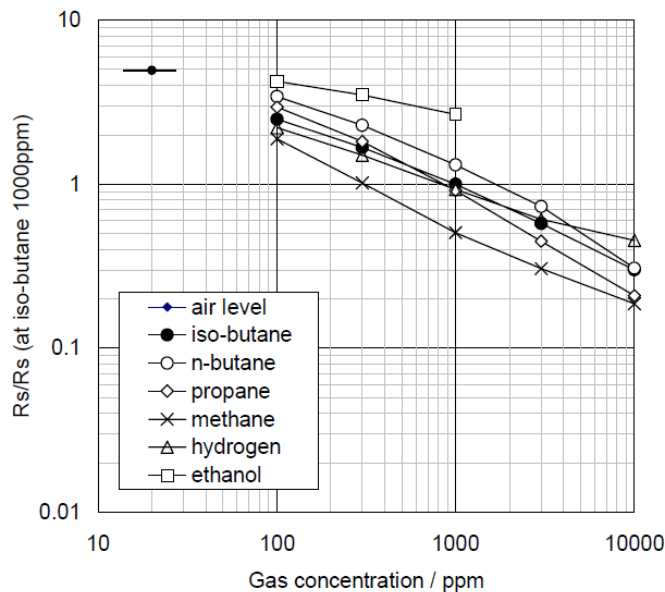
6. Gas sensitivity specifications

NO	Parameters	Conditions	Specifications	Remarks
1	Resistance in iso-butane (IB) 1000ppm	R_s (IB 1000)	0.4k ~ 3.0kohm	
2	Concentration Slope 1000 - 3000ppm	$R_s(\text{IB } 3000) / R_s(\text{IB } 1000)$	0.45 ~ 0.65	
3	Sensitivity of IB	$R_s(\text{air})/R_s(\text{IB } 1000)$	more than 5.0	
4	Ethanol selectivity	$\frac{R_s(\text{ET } 1000)}{R_s(\text{IB } 1000)}$ at 35°C, 85%RH	more than 1.5	
5	Hi side heater current	$I_s(\text{VH})$ VH=DC 0.9v	132mA ± 15mA	
6	Heater resistance	RH	2.6 ~ 3.0 ohm	in 25°C
7	Low temperature side, temperature dependency	$\frac{R_s(\text{IB } 1000 \text{ at } -10^\circ\text{C})}{R_s(\text{IB } 1000 \text{ at } 20^\circ\text{C}, 65\%)}$	2.0 ± 0.4	1 hour retention
8	Hi temperature side, temperature dependency	$\frac{R_s(\text{IB } 1000 \text{ at } 50^\circ\text{C}, 60\%)}{R_s(\text{IB } 1000 \text{ at } 20^\circ\text{C}, 65\%)}$	0.65 ± 0.15	1 hour retention

Note: The above characteristics are specified using the Standard Circuit and operating conditions shown in section 5.

The unit of the gas concentration is ppm. IB means iso-butane.

<Example of sensitivity dependency>



SPECIFICATIONS

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Model SB-15C-00

Specification No.
S-2006-01

7. Mechanical characteristics

NO	Parameters	Conditions	Specifications
1	Connection strength of filter housing	Between the external filter housing and base	More than 9.8N(1kgf)
2	Vibration	Acceleration; 12.7m/s ² (1.3G) Frequency range; 5 ~ 500Hz Method of changing the sweep; Logarithmic Sweep time; 40min. Direction of vibration; 3 directions (X,Y,Z) Duration; 66hr of each direction	Should satisfy the specifications shown in 6 and 7 Characteristics
3	Drop and impact	From the height 1m, freedom drop Floor material; Concrete Test number of times; three	Should satisfy the specifications shown in 6 and 7 Characteristics
4	Soldering specifications	Standard; JIS C 0050 (1997) 4.7.2 Soldering iron; Trowel point B Soldering times; 2~3seconds	More than 9.8N(1kgf) The wet ability is good.

8. Related drawing sheets

1. Package sheet: K-970815-SB-04
2. Product drawing:

9. Design life

The design life of this product is 5 years or more as the performance period for maintaining gas detection.

10. Handling of this specification

Modifications of amendments of these specifications shall be made based the agreement between the user and FIS.

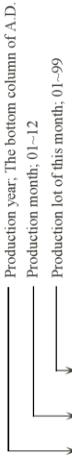
Modifications or amendments of these specifications shall be confirmed by all concerned parties. This specification should not be disclosed to any other parties without agreement.

Operating conditions: see SB-15C-00 specification

Weight: Approx. 1.2g

Identification Markings: The production identifier is seven characters, the part name is nine characters.

Example,

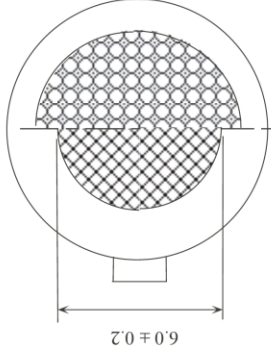


SB - 15C - 00

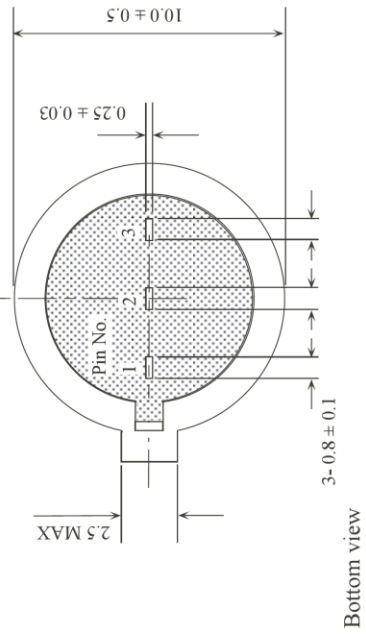
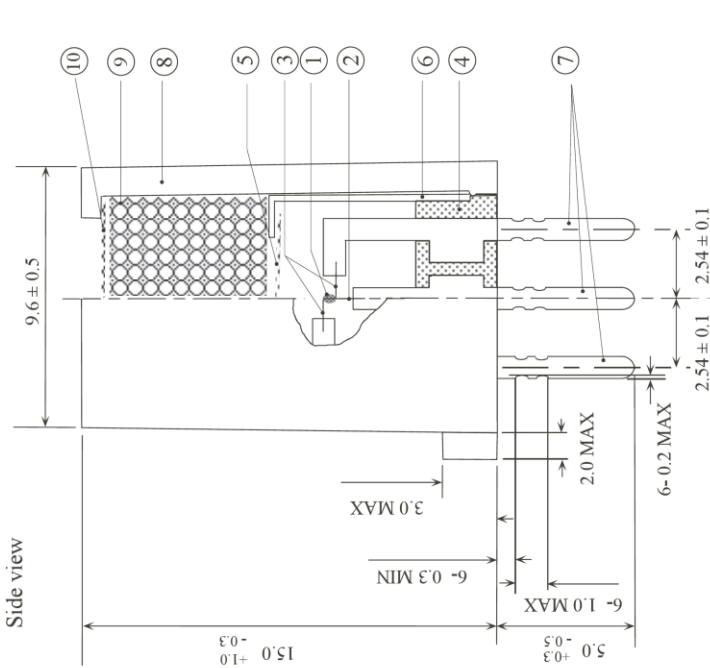
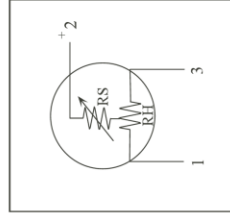
← Part name, internal code

Storage: Don't store in high humidity environment or in a place where solvent is present. Sensors should be stored in a sealed bag.

Top view



EQUIVALENT CIRCUIT



⑩	Mesh	SUS316,100mesh
⑨	Silica gel filter	Silica Gel
⑧	Filter Housing	NYLON6 A1030JR, UL-94 V-2 UNITIKA, color gray.
⑦	Electrode Pin	Iron-chrome Alloy
⑥	Sensor Cover	Nickel Plated Brass (65S 1/2H)
⑤	Mesh	SUS316,100mesh
④	Sensor Base	PBT, GF 30%, UL-94 HB TEIJIN, PBT C7030B BLACK
③	Heater Coil	Pt, 20µm
②	Lead Wire	Pt, 20µm
①	Sensor Element	SnO2

NO.	PART NO.	PART NAME	MATERIAL
MATERIAL			
FINISH			
SCALE	5/1	UNIT	mm
DRAWN	28JUN16	CHECKED	
D.E.	K.FUKUCHI	S.MATSUMOTO	
DATE			
REVISION RECORD		PART NAME	
		SB-15C-00	
LTR		PART NO.	
		CHECKED	
		S.MATSUMOTO	
		FIS	FIS Incorporated