Self-Diagnostic & Continuous

STAND-ALONE EXTRACTIVE GAS DETECTORS

MODEL SH-1003/1007PA

◆ **Stand-Alone Gas detection system**

- LCD display
  (Gas name & concentration)
- DC 4 – 20 mA output
- Local audio & visual alarm
- Alarm 1, 2 & error relay contacts
- AC 100 – 240 V operation

◆ **Bypass flow allows**

quick detection

◆ **System Status**

- Disconnect sensor
- Low electrolyte level of sensor
- Lose of sample flow
- Disconnect signal cable
- Filament failure (SH-1007PA only)

SH-1003PA

The new Bionics' *SH-1003/7PA* Gas Detectors are completely self-contained detection unit suitable for wide range of hazardous gases.

The unit consists of a sensitive and specific electrochemical gas sensor and gas sampler with various output capabilities. As a result, this fully integrated unit is used as stand-alone gas detectors in a centralized life-safety surveillance system.

The unit features user-programmable dual-level concentration alarms, built-in alarm relays, and 4 – 20mA output as a local digital readout, audio and visual alarm indicators.

Equally important, it utilizes a renewable type sensor (GS-[*]HY) that requires replacing membrane and electrolyte twice per year at least and will last 3 to 5 years under normal operating conditions.

Furthermore, The Bypass flow system makes half the time that the sample gas reaches the sensor.

SH-1003PA Detector

System No.	Target Gas		Sensor GS-[*]HY (Unless otherwise indicated)	Monitoring Range (ppm)		TLV(ACGIH) (ppm)	Remarks
				Low	Standard		
100	$C\ell_2$	Chlorine	160		0 - 1.5	0.1	
			161	0 - 0.3	0 - 1		
200	H2S	Hydrogen Sulfide	260		0 - 30	1	
400	$HC\ell$	Hydrogen Chloride	480	0 - 6	0 - 15	2 (C)	
500	SO_2	Sulfur Dioxide	550EP		0 - 6	0.25 (STEL)	
700	HF	Hydrogen Fluoride	780		0 - 9	0.5	
800	O_3	Ozone	880	0 - 0.3	0 - 1	0.1	
900	Br_2	Bromine	960		0 - 3	0.1	
			961		0 - 0.3		
1100	O2	Oxygen	1100EP		0 – 25%		Oxygen deficiency monitoring
1200	CO	Carbon Monoxide	1250EP		0 – 75	25	
1400	F_2	Fluorine	1461	0 - 1	0 - 3	0.1	
	$C\ell F_3$	Chlorine Trifluoride	1463		0 - 0.3	0.1 (C)	
1500	H_2	Hydrogen	1555EP	0 - 1000	0 - 4000	–	
1700	NO	Nitric Oxide	1790EP		0 - 100	25	
	NO_2	Nitrogen Dioxide	1750EP		0 - 9	0.2	
	HNO_3	Nitric Acid	1783		0 - 6	2	
2100	C_2H_5OH	Ethyl Alcohol	2150EP		0 - 1000	1000 (STEL)	
	IPA	Iso Propyl Alcohol			0 - 600	200	
2400	NH_3	Ammonia	2460		0 - 75	25	
	CH_3NH_2	Methylamine			0 - 30	5	
	$C_2H_5NH_2$	Ethylamine			0 - 30	5	
	$(CH_3)_2NH$	Dimethylamine			0 - 30	5	
2500	N_2H_4 [1]	Hydrazine	2560		0 - 2	0.01	
	$Ti[N(CH_3)_2]_4$	*TDMAT* [2]			0 - 1		Under N2 condition
	$C_2H_4(NH_2)_2$	Ethylene Diamine			0- 300	10	
3100	*General Acid*		3180	Depending on gas to be detected		–	
3200	H_2Se	Hydrogen Selenide	3260		0 - 1	0.05	
3400	*Chloride* [3]		3480		0 – 6	–	
	HBr	Hydrogen Bromine	3480		0 - 9	2 (C)	
3700	*Fluoride* [4]		3780		0 - 9	–	
4000	*Hydride*		4060				For dry scrubber monitoring No interference from H_2 and IPA
	PH_3	Phosphine			0 - 1	0.05	
	AsH_3	Arsine			0 - 0.2	0.005	
	SiH_4	Silane			0 - 15	5	
	B_2H_6	Diborane			0 - 0.3	0.1	
5000	GeH_4	Germane	5050EP		0 - 0.6	0.2	
	SiH_4	Silane			0 - 15	5	
	PH_3	Phosphine			0 - 1	0.05	
	$(CH_3)_3SiH$	Trimethyl Silane			0 - 15		
	CH_3SiH_3	Methyl Silane			0 - 15		
	AsH_3	Arsine			0 - 0.2	0.005	

[1] *N_2H_4*: MMH– Monomethyl Hydrazine, DMH– Dimethyl Hydrazine

[2] *TDMAT*: Tetrakis dimethylamido titanium

[3] *Chloride*: $SiC\ell_4$, $SiH_2C\ell_2$, $POC\ell_3$, $SnC\ell_4$, $SbC\ell_5$, $BC\ell_3$

[4] *Fluoride*: SiF_4, BF_3, WF_6, AsF_3, PF_5, AsF_5, MoF_6

SH-1007PA Detector

System No.	Target Gas		Sensor GS-[*]HY	Monitoring Range (ppm)		TLV(ACGIH) (ppm)	Remarks
				Low	Standard		
4100	NF_3	Nitrogen Trifluoride	4180		0 - 30	10	CEC (Combined Electro-chemical Cell)
4200	*HCFC* [5]		4280		0 - 200		
4300	*Chlorinated Hydrocarbons* [6]		4380		0 - 200		
4400	CH_3Br	Methyl Bromide	4460		0 - 50	1	
4500	SF_6	Sulfur Hexafluoride	4580		0 - 200	1000	
4700	*HFC* [7]		4780	Depending on gas to be detected [9]		–	
	PFC [8]	Freon				–	
4900	CH2=CHCN	Acrylonitrile	4960		0 - 60	2	

[5] *HCFC*

HCFC-22	$CHC\ell F_2$
HCFC-123	$CHC\ell CF_3$

[6] *Chlorinated Hydrocarbon*

Carbon Tetrachloride	$CC\ell_4$
Chloromethane	$CH_3C\ell$
Methylene Chloride	$CH_2C\ell_2$
Chloroform	$CHC\ell_3$
1, 2-Dichloroehylene	$C_2H_2C\ell_2$
Chloroethane	C2H5Cl

[7] *HFC*

HFC-23	CHF_3
HFC-134a	CH_2FCF_3

[8] *PFC*

CF_4 C_2F_6 C_3F_6 C_3F_8
C_4F_6 C_4F_8 C_5F_8 C_6F_6

[9] Monitoring ranges available upon request.
Example: 5000 ppm for CF_4

SENSORS

GS-[*]HY (renewable)

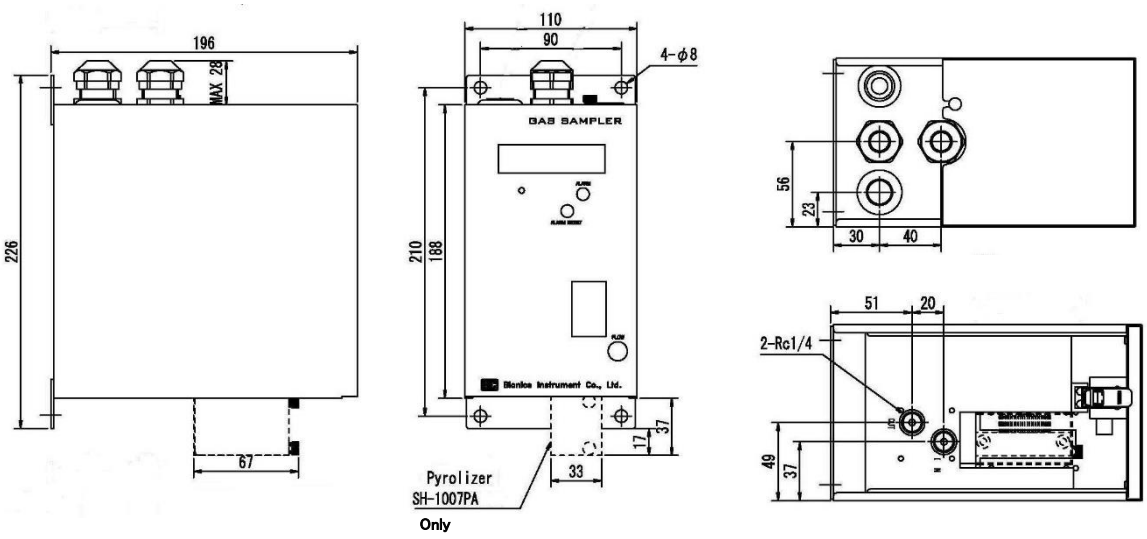
GS-[*] EP (disposable)

SPECIFICATIONS

	SH-1003PA	SH-1007PA
Sensor Model	GS-[*]HY/EP	
Monitoring Configuration	Continuous, single-point, extractive	
Sensor Type	Electrochemical Cell	Combined Electrochemical Cell
Pyrolyzer	Not provided	Built-in
Flow Rate	0.2 or 0.5 L/m	0.15 L/m
Display	Characteristic LCD (Gas Name & Concentration)	
Analog Output	4 ~ 20 mA DC (Max. load resistance 750Ω)	
Alarm Relay	A1: dry c, A2: dry c	
System Error Relay	dry b (Fail safe action)	
Relay Capacity	AC125V, 0.3A or DC30V, 1A	
Alarm Indication	Red LED and Buzzer	
Alarm Accuracy	± 30% of Alarm setting amount	
Installation Method	Indoor, Wall-mount	
Operating Temperature	0 ~ 40 °C	
Operating Humidity	20 ~ 85% RH (Condensation-free)	
Power Requirement	AC100-240V, approx. 15W	
Dimensions (mm)	110(W) × 188(H) × 195(D) (excludes Protrusion)	
Mounting Dimensions (mm)	90(W) × 210(H)	
Weight	Approx. 3.5kg	

DIMENSIONS

SH-1003/1007PA



Unit: mm

※We reserve the right to change specifications without notice.

Bionics Instrument Co., Ltd.
6-1254-2 Shimizu, Higashi-yamato, Tokyo, 207-0004 Japan.
TEL: +81-42-561-4856 FAX: +81-42-563-9228
e-mail: trade@bionics-japan.co.jp URL : https://www.bionics-japan.co.jp/en/

PureAire Monitoring Systems Inc.
1140 Ensell Road, Lake Zurich, Illinois 60047-6711, USA.
TEL: +1-847-726-6000 FAX: +1-847-726-6051 Toll Free: 888-788-8050
e-mail: info@pureaire.net URL : http://www.pureairemonitoring.com

Global Bionics Trading Corp.
No.18, Alley 29, Lane 335, Chenggong Rd., Hukou Township, Hsinchu County 30345, Taiwan.
TEL: +886-3-553-8986 FAX: +886-3-553-8987
e-mail: gbionics@ms56.hinet.net URL : http://www.bionics.com.cn

Advan Analytical
18 Boon Lay Way, #04-116 Tradehub 21, Singapore 609966.
TEL: +65-6908-1512 FAX: +65-6255-7902
e-mail: bionics@advananalytical.com URL : http://www.advananalytical.com