



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	Cl ₂	Chlorine	160		0 - 1.5	0.5	
			161	0 - 0.3	0 - 1		
400	HCl	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		
1200	CO	Carbon Monoxide	1250EP		0 - 75	25	
1400	F ₂	Fluorine	1461	0 - 1	0 - 3	1	
	ClF 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	1750		0 - 9	3	
	HNO ₃	Nitric Acid	1783		0 - 6	2	
2100	C ₂ H ₅ OH	Ethyl Alcohol	2150EP		0 - 1000	1000 (STEL)	
	IPA	Iso Propyl Alcohol			0 - 600	200	
2400	NH ₃	Ammonia	2460		0 - 75	25	
	CH ₃ NH ₂	Methylamine			0 - 30	5	
	C ₂ H ₅ NH ₂	Ethylamine			0 - 30	5	
	(CH ₃) ₂ NH	Dimethylamine			0 - 30	5	
	(CH ₃) ₃ N	Trimethylamine			0 - 75	5	
	(C ₂ H ₅) ₃ N	Triethylamine			0 - 75	1	
2500	N ₂ H ₄ ¹⁾	Hydrazine	2560		0 - 2	0.01	
	Ti[N(CH ₃) ₂] ₄	TDMAT ²⁾			0 - 1		
	C ₂ H ₄ (NH ₂) ₂	Ethylene Diamine			0 - 300	10	
3100	General Acid		3180	Depending on gas to be detected		—	
3200	H ₂ Se	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	0.3	
	AsH ₃	Arsine			0 - 0.2	0.005	
	SiH ₄	Silane			0 - 15	5	
5000	B ₂ H ₆	Diborane	5050EP		0 - 0.3	0.1	
	GeH ₄	Germane			0 - 0.6	0.2	
	SiH ₄	Silane			0 - 15	5	
	PH ₃	Phosphine			0 - 1	0.3	
	(CH ₃) ₃ SiH	Trimethyl Silane			0 - 15		
	(CH ₃ O) ₃ SiH	Trimetoxo Silane			0 - 15		
AsH ₃	Arsine		0 - 0.2	0.005			

SH-1007PA Detector

System No.	Target Gas		Sensor GT-[*]H	Monitoring Range (ppm)		TLV(ACGIH) (ppm)	Remarks
				Low	Standard		
4100	NF ₃	Nitrogen Trifluoride	4150		0 - 30	10	CEC (Combined Electro-chemical Cell)
4200	HCFC ⁵⁾		4280		0 - 200		
4300	Chlorinated Hydrocarbons ⁶⁾		4380		0 - 200		
4400	CH ₃ Br	Methyl Bromine	4460		0 - 50		
4500	SF ₆	Sulfur Hexafluoride	4580		0 - 200		
4700	HFC ⁷⁾		4780	Depending on gas to be detected ⁹⁾		–	
	PFC ⁸⁾					–	

¹⁾ N₂H₄: MMH– Monomethyl Hydrazine, DMH– Dimethyl Hydrazine

²⁾ TDMAT: Tetrakis dimethylamido titanium

³⁾ Chloride: HBr, SiCl₄, SiH₂Cl₂, POCl₃, SnCl₄, SbCl₅, BCl₃

⁴⁾ Fluoride: SiF₄, BF₃, WF₆, AsF₃, PF₅, AsF₅, MoF₆

⁵⁾ HCFC

HCFC-22	CHClF ₂
HCFC-123	CHClCF ₃
HCFC-124	CHClFCF ₃

HCFC-141b	CH ₃ CCl ₂ F
HCFC-142b	CH ₃ CClF ₂
HCFC-225	C ₃ HCl ₂ F ₅

⁶⁾ Chlorinated Hydrocarbon

Chlorobenzene	C ₆ H ₅ Cl
Perchloroethylene	CCl ₂ :CCl ₂
Trichloroethylene	CHCl:CCl ₂
Carbon Tetrachloride	CCl ₄

Methylene Chloride	CH ₂ Cl ₂
Chloroform	CHCl ₃
1, 2-Dichloroethylene	C ₂ H ₂ Cl ₂

⁷⁾ HFC

HFC-23	CHF ₃
HFC-125	CHF ₂ CF ₃
HFC-134a	CH ₂ FCF ₃

HFC-143a	CH ₃ CF ₃
HFC-152a	CH ₃ CHF ₂

⁸⁾ PFC

C ₄ F ₆	C ₅ F ₈	CF ₄
C ₂ F ₆	C ₃ F ₆	C ₄ F ₈
	C ₆ F ₆	

⁹⁾ Monitoring ranges available upon request.

Example: 5000 ppm for CF₄

SENSORS

SH-1003/1007PA



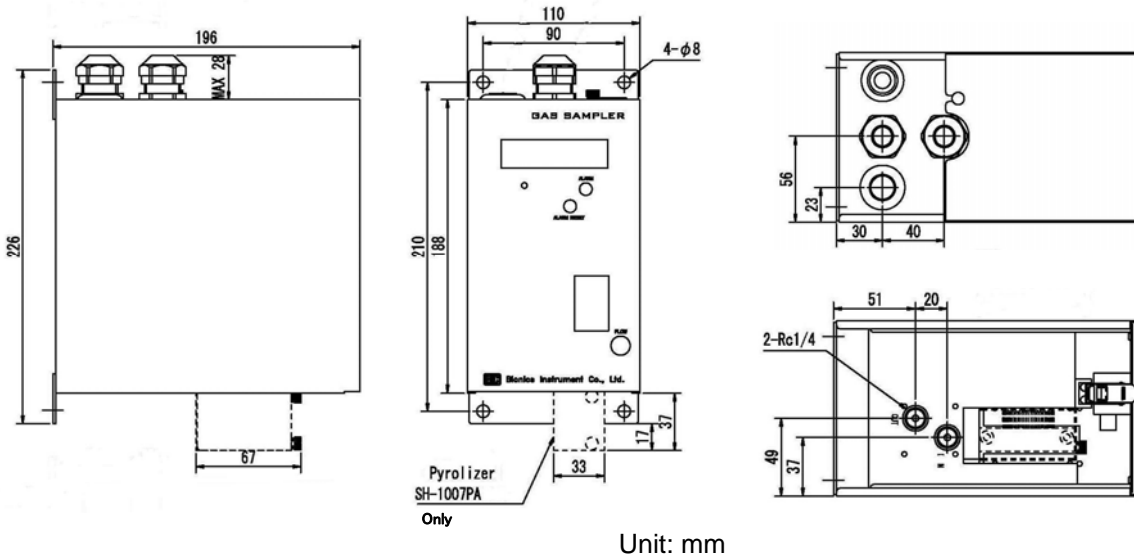
GS-[*]HY (renewable)



GT-[*] EP (disposable)

	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 (non-condensing)	
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



※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: +81-42-565-3950
 e-mail: trade@bionics-japan.co.jp URL: <http://www.bionics-japan.co.jp>

Bionics Instrument Europe B.V.

Maxwellstraat 7, 1704 SG Heerthugowaard, The Netherlands
 TEL: +31-72-576 5630 FAX: +31-72-572 1818
 e-mail: sales@bionics-europe.com URL: <http://www.bionics-europe.com>

PureAire Monitoring Systems Inc.

557 Capital Drive, Lake Zurich, IL 60047, 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>