Self-Diagnostic & Continuous

INTELLIGENT EXTRACTIVE GAS DETECTORS
SH-1003HT-D/1007HT-D

- **"Intelligent" sensor assembly permits quick and simple off-site calibration.**
- **Sensor information stored in sensor memory.**
- **Enhanced self-diagnostic capability — continuously checking sensor performance.**
- **Special maintenance mode permits in-situ gas testing without generating alarms.**
- **Compact and highly-densities design.**

The new Bionics' ***SH-1003HT-D/1007HT-D*** Gas Detector are designed to set new standards in toxic gas monitoring. Featuring a sophisticated electronic "brain" built directly into the sensor assembly, these well-proven continuous extractive detection systems significantly reduce the labor and downtime commonly associated with gas detector maintenance and service.

Equally important, the ***SH-1003HT-D/1007HT-D*** are specially engineered to permit high density installation, packing up to 3 times as much monitoring into the same, compact footprint as previous.

The instruments' "smart" circuitry permits ex-situ or off-site calibration and maintenance of the sensor cell, significantly reducing the amount of time personnel must spend in restricted or sensitive areas. Plus, when used in conjunction with the Bionics Controller, system operation is almost totally self-supervised to provide quick and easy fault identification and notification.

The special electronic "brain" built directly into the sensor assembly of the ***SH-1003HT-D/1007HT-D*** allows you to remove the sensor from the detector system for all routine calibration and maintenance.

This capability provides three important benefits:

1) **Enhanced Calibration Accuracy**
   Test gas generation and calibration procedures may now be performed under laboratory conditions.
2) **Improved Safety**
   No need to release potentially hazardous calibration gases in production, storage, or other areas.
3) **Less Intrusive**
   Significantly reduces the amount of time that service personnel must spends in limited or restricted access areas, such as in clean rooms.

The ***SH-1003HT-D/1007HT-D*** are electrochemical-based detection systems capable of sampling areas up to 10 meters away.

SH-1003HT-D Detector

System No.	Target Gas		Sensor GS-[*]HT-J (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	550ET-J		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	1100ET-J		0 – 25%		Oxygen deficiency monitoring
1200	CO	Carbon Monoxide	1250ET-J		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	1555ET-J	0 - 1000	0 - 4000	–	
1700	NO	Nitric Oxide	1790ET-J		0 - 100	25	
	NO_2	Nitrogen Dioxide	1750ET-J		0 - 9	0.2	
	HNO_3	Nitric Acid	1783		0 - 6	2	
2100	C_2H_5OH	Ethyl Alcohol	2150ET-J		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	5050ET-J		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-1007HT-D Detector

System No.	Target Gas		Sensor GS-[*]HT-J	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

SH-1003HT-D/SH-1007HT-D

GS-[*]HT-J
(renewable)

GS-[*] ET-J
(disposable)

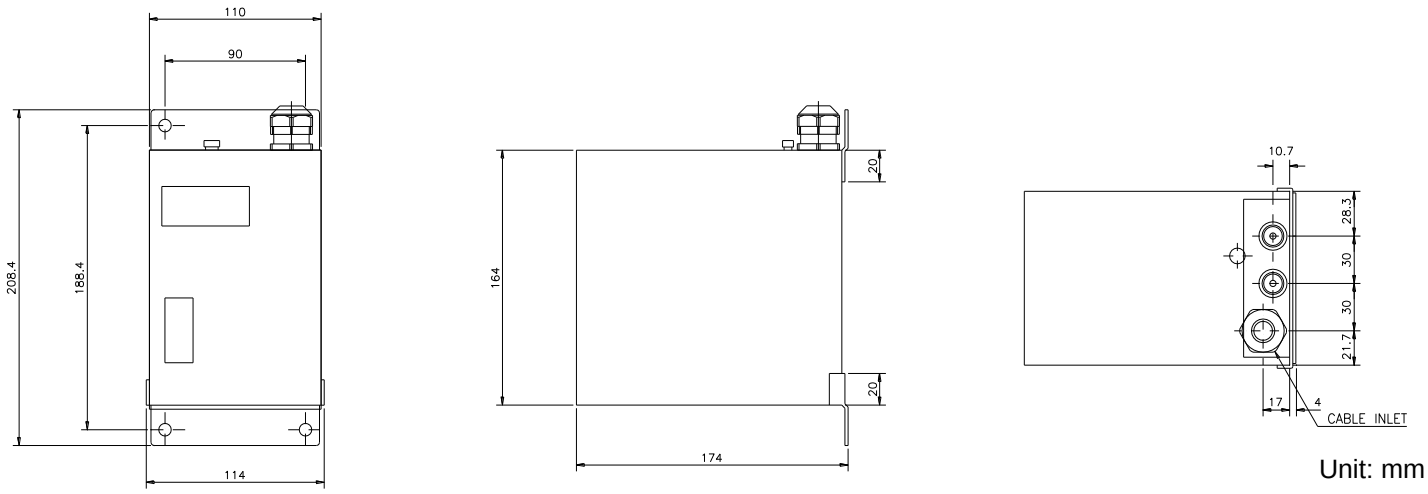
SPECIFICATIONS

SH-1003HT-D/SH-1007HT-D

	SH-1003HT-D	SH-1007HT-D
Sensor Model	GS-[*]HT-J / ET-J	
Monitoring Configuration	Continuous, single-point, extractive	
Sensor Type	Electrochemical Cell	Combined Electrochemical Cell
Installation Method	Indoor, Wall-mount	
Operating Temperature	0 ~ 40 °C	
Operating Humidity	20 ~ 85 % RH (Condensation-free)	
Power Requirement	24V DC, 10W	
Analog Output	4 ~ 20 mA DC	
Alarm	A1: Orange LED	
	A2: Red LED	
	System Error: Show error No. on LED display	
Indicator	4-digit LED Display	
Sampling Pump	DC operated diaphragm pump	
Pyrolyzer	Not provided	Built-in
Dimensions (mm)	110(W) × 208.4(H) × 174(H)	
Weight	Approx. 4kg	

DIMENSIONS

SH-1003HT-D/SH-1007HT-D



Unit: mm

※We reserve the right to change specifications without notice.

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