Compact & Continuous

EXTRACTIVE GAS DETECTORS

models SH-1403/1407TW-FL

- **Using Bionics**

  Renewable sensor

- **Simple and Compact**

- **System Status**

  Filament failure (SH-1407TW-FL)

  Disconnect signal cable

- **Same compact size for**

  NF_3, PFC detection

Bionics extractive-type gas detectors are widely used for the continuous monitoring of gas cabinets, process tools and scrubber systems.
A key advantage of extractive systems is the ability to easily maintain the gas detector without entering sensitive or hazardous areas.
And also incorporate a 4 – 20 mA output which can be connected directly to a DCS, thus eliminating the need for a controller.
When extractive gas detection systems are used, sample line length and materials must be carefully selected to minimize response time and sample adsorption.

The potential for sample loss during transport is particularly acute when monitoring HCl, NH3 and HF.
Models SH-1403TW-FL and SH-1407TW-FL operate on 24V DC power eliminating expensive wiring costs.
Model SH-1407TW-FL NF3 Detector features an integrated Pyrolyzer.
Pyrolyzer status is continuously displayed on the front panel of the instrument.
Models SH-1403TW-FL and SH-1407TW-FL are economical version.

SH-1403TW-FL 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-1407TW-FL 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

GS-[*]HY
(renewable)

GS-[*]EP
(disposable)

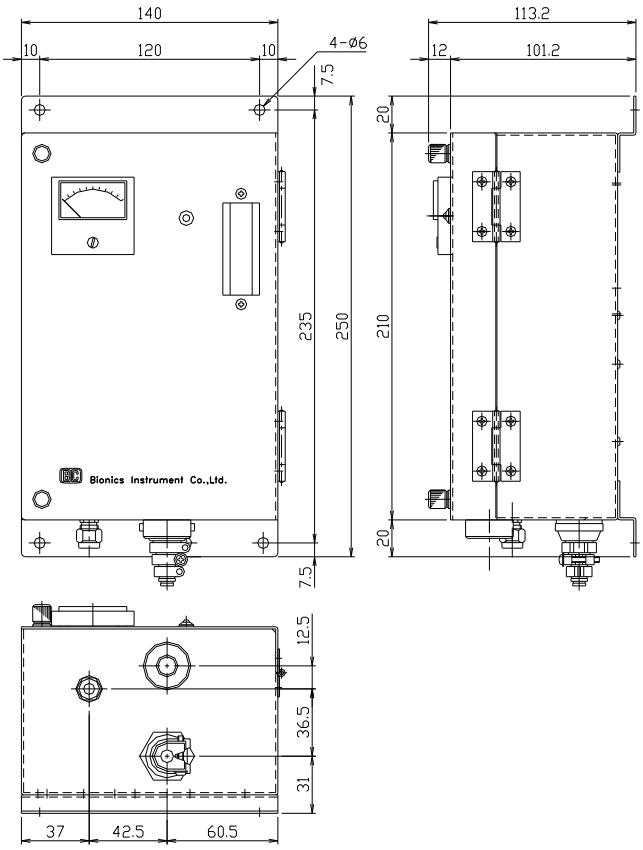
SPECIFICATIONS

SH-1403/1407TW-FL

	SH-1403TW-FL	SH-1407TW-FL
Sensor Model	GS-[*]HX / HY / EP	
Monitoring Configuration	Continuous, single-point, extractive	
Sensor Type	Electrochemical Cell	Combined Electrochemical Cell
Pyrolyzer	Not provided	Built-in
Analog Output	4 ~ 20 mA DC	
Indicator	Analog Display	
Installation Method	Indoor, Wall-mount	
Operating Temperature	0 ~ 40 °C	
Operating Humidity	20 ~ 85% RH (Condensation-free)	
Power Requirement	24V DC, 10W	
Dimensions (mm)	Approx. 140(W) × 250(H) × 115(D)	
Weight	Approx. 4kg	

DIMENSIONS

SH-1003/1007GT



Unit: mm

※We reserve the right to change specifications without notice.

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