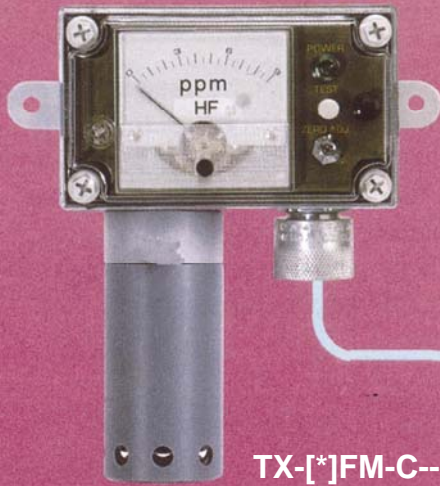




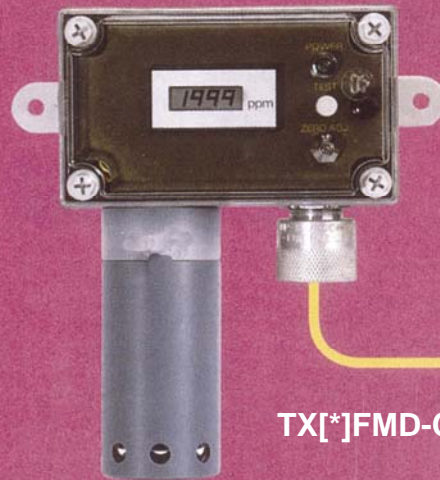
Two-wire

Toxic Gas Transmitters

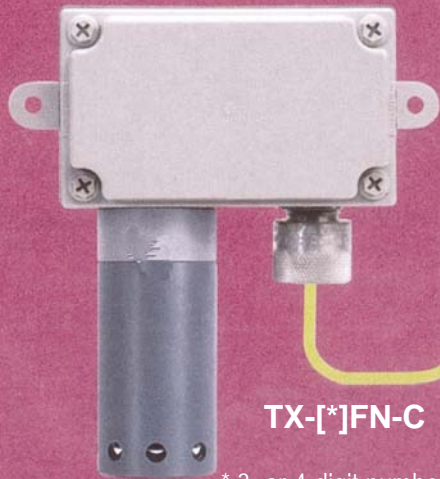
Models TX-[*]FM-C/TX-[*]FMD-C/TX-[*]FN-C



TX-[*]FM-C--



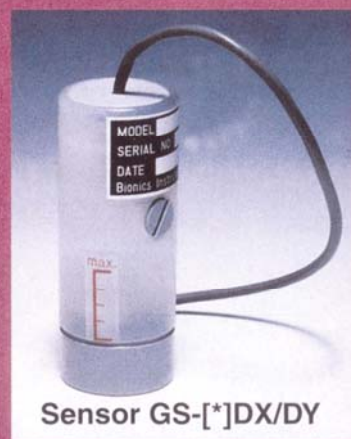
TX[*]FMD-C



TX-[*]FN-C

HAZARDOUS AREA

NON-HAZARDOUS AREA



Sensor GS-[*]DX/DY



* 3- or 4-digit number which represents the detectable gas shown in the ORDERING INFORMATION on the inside page.

- **Renewable Sensors for Low-cost Operation**
- **Intrinsically Safe for Use in Areas of Class I, Division 1, Group B, C and D When Used with a Safety Barrier**
- **IP 65 and NEMA 4X Housing Allows Installation Outdoors and in Tough Environments**
- **3/4" NPT Conduit for Wiring Connections**

Bionics offers a simple, compact yet complete toxic gas monitoring systems for chemical and petro-chemical industries with the TX[*]FM-C/FMD-C/FN-C transmitters series.

These transmitters are CSA-approved for intrinsic safety, for use in hazardous areas of Class I, Division 1, Group B, C and D when connected with the zener barrier MTL788+ in a non-hazardous area. Adding a Bionics controller or any other 4-20 mA signal receiving device completes the system. The TX[*]FMG-C/FMDG-C/FNG-C transmitters are also

Appropriate for installation outdoors and in tough environments due to the IP 65 and NEMA 4X housing. The polycarbonate housing is watertight, dusttight and corrosion-resistant.

The Bionics toxic gas sensors, to be used in combination with the TX[*]FM-C/FMD-C/FN-C transmitters, are gas-specific, stable and available for a wide range of different gases. Since the sensors are refreshed periodically by replacing the electrolyte and membranes, the running cost is kept low compared to sensors which require frequent replacement.

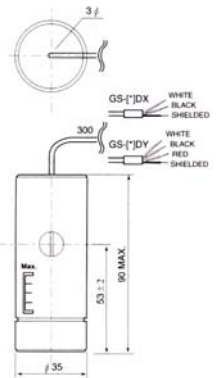
SPECIFICATIONS

Model	TX-[*]FM-C**	TX-[*]FM TX-[*]FMD TX-[*]FN	TX-[*]EP-A/TX-[*]FH
	TX-[*]FMD-C**		TX-[*]EP-D/TX-[*]FHD
	TX-[*]FN-C**		
Sensor Type	GS-[*]DX/DY (Cable connection)		GS-[*]BY
Detecting Method	Electrochemical sensor		
Operating Temp.	-10°C to + 55°C		
Sampling Method	Diffusion		
Accuracy	Within ±5% of full scale(O ₂ ±2% of full scale)		
Power Requirements	24V DC		
Output Signal	4-20 mA DC		
Dimensions	See figures below.		See figures on the right page.
Weight	Approx. 1.0 kg		Approx. 0.8 kg
Indicator	FM-C : Analog disp. FMD-C : Digital disp. FN-C : No indicator	FM : Analog disp. FMD : Digital disp. FN : No indicator	EP-A/FH : Analog display EP-D/FHD : Digital display
Mounting Style	Wall or Pole		Wall

** If you do not need 3/4" conduit for wiring connector, please Take"-C" from the model number.

You can get FM/FMD/FN type.

Sensors
GS-[*]DX(2-wire)
GS-[*]DY(3-wire)



EXTERNAL VIEW & DIMENSIONS

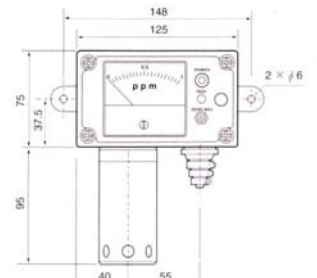
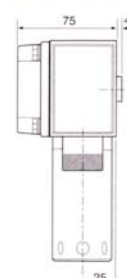
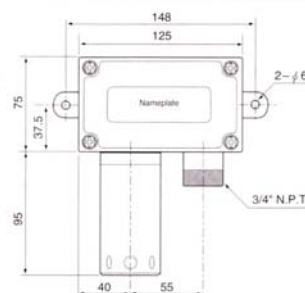
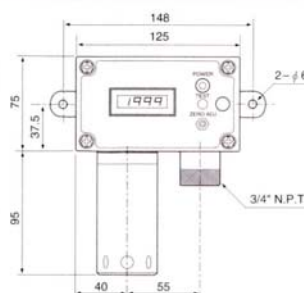
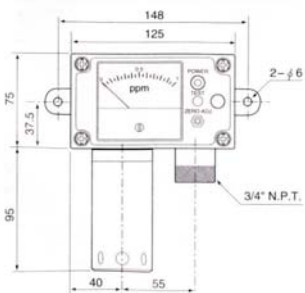
Transmitter TX-[*]FM-C

Transmitter TX-[*]FMD-C

Transmitter TX-[*]FN-C

Side View (C suffixed)

Transmitter TX-[*]FM



Unit: mm

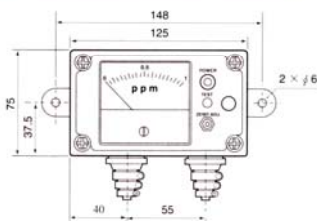
Transmitter		Gas To Monitor	Sensor	Monitoring Range			TLV (AGGIH) (ppm)	
TX-[*]FM-C**	TX-[*]FM			GS-[*]	Low Range (ppm)	Standard (STEL) (ppm)		High Range (IDLH) (ppm)
TX-[*]FMD-C**	TX-[*]FMD							
TX-[*]FN-C**	TX-[*]FN							
100		Cl ₂	Chlorine	DX		0-3	0-10	0.5
101					0-0.3	0-1		
102							0-50	
	260	H ₂ S	Hydrogen Sulfide	DY	0-10	0-30		10
	360	HCN	Hydrogen Cyanide	DY		0-30		4.7
	470	HCl	Hydrogen Chloride	DY		0-15	0-200	5
	480				0-15			
	580	SO ₂	Sulfur Dioxide	DY	0-5	0-15		2
	583	SO ₃	Sulfur Trioxide		0-5	0-15		-
	660	COCl ₂	Phosgene	BY	0-0.3	0-1	0-5	0.1
	780	HF	Hydrogen Fluoride	DY		0-9	0-50	3
	880	O ₃	Ozone	DX	0-0.3	0-3	0-10	0.1
901		Br ₂	Bromine	DX	0-0.3			0.1
1100		O ₂	Oxygen	EP		0-25%		
1250		CO	Carbon Monoxide	EP		0-100		25
1401		F ₂	Fluorine	DX		0-3	0-30	1
	1551	H ₂	Hydrogen	DY	0-1000	0-4000		-
	1680	CH ₃ COOH	Acetic Acid	DY		0-30		10
	1750	NO ₂	Nitrogen Dioxide	EP	0-2	0-9		3
	1783	HNO ₃	Nitric Acid	DY		0-6		2
	1790	NO	Nitric Oxide	EP		0-100		25
	2150	IPA		EP		0-1000		400
	2460	NH ₃	Ammonia	DY		0-75		25
	3180	General Acid			0-3		-	
	3480	HBr	Hydrogen Bromide		0-9		3	
	3480	Chloride(SiCl ₄ ,DCS,TCS,BCl ₃)			0-15		5	
	3780	Fluoride(SiF ₄ ,BF ₃ ,WF ₆ ..)			0-9		3	
	4060	B ₂ H ₆	Diborane	DY		0-0.3		0.1
	5050	AsH ₃	Arsine	EP		0-0.2		0.05
		PH ₃	Phosphine			0-1		0.3
		SiH ₄	Silane			0-15		5
		GeH ₄	Germane			0-0.6		0.2

** If you do not need 3/4" conduit for wiring connector, please take "-C" from the model number. You can get FM/FMD/FN type.

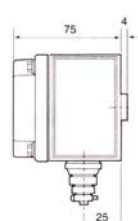
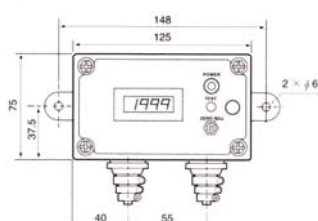
*** CH₃NH₂, C₂H₅NH₂, (CH₃)₂NH, (C₂H₅)₂NH

EXTERNAL VIEW & DIMENSIONS

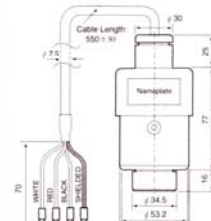
Transmitter TX-[*]FH



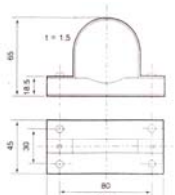
Transmitter TX-[*]FHD



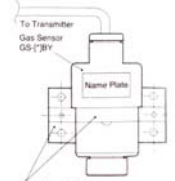
Sensor GS-[*]BY



Wall Mounting Bracket SH-54B



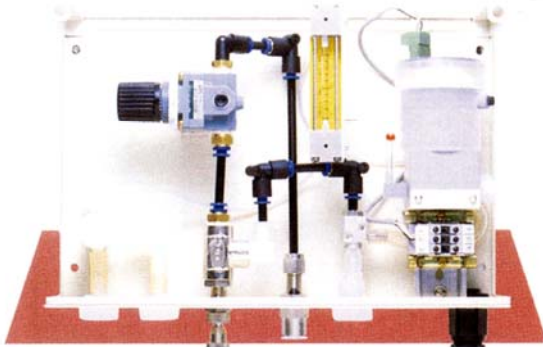
GS-[*]BY on SH-54B



Unit:

The Bionics gas samplers are available where a sample draw gas detection system is requested. The SH-2506 sampler is the intrinsically safe model suitable for installation in hazardous areas where electrical pump is not allowed. This sampler with an integral aspirator requires an air compressor for operation.

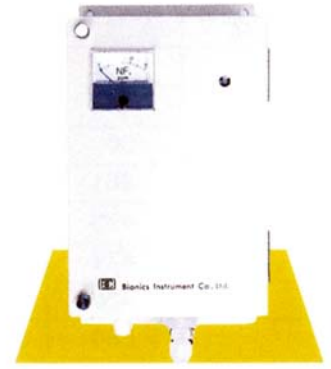
For non-hazardous areas, the Bionics standard gas samplers such as the SH-2703KE equipped with an AC pump or the DC operated SH-1403TW are appropriate. The samplers can be installed inside protective housings according to requirements of the installation site.



The SH-2506 sampler with front panel removed for maintenance



One example of the SH-2703KE sampler in a watertight housing

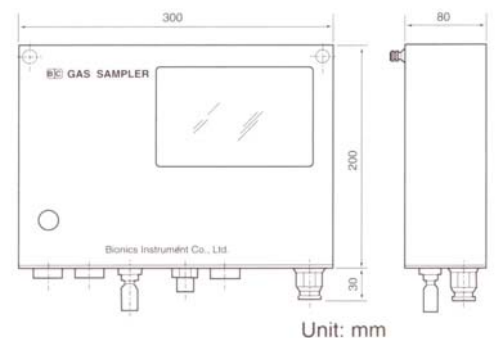


SH-1403TW sampler

SPECIFICATIONS

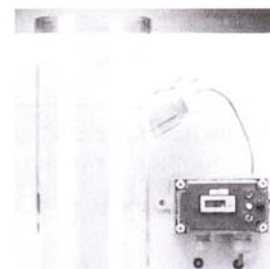
Model	SH-2506	SH-2703KE	SH-1403TW
Sensor Model			
Sampling Method	Comp. air	AC pump	DC pump
Installation Style	Wall Mounting		
Indicator	None	Analog	
Power Requirements	None	AC 100/200 V & DC 24V	DC 24 V
Weight (approx.)	3.5 kg	4 kg	2.2 kg
Dimensions(mm)	300(W) x 200(H) x 80(D)		140(W)x210(H) x 101.2(D)

SH-2506 Dimensions

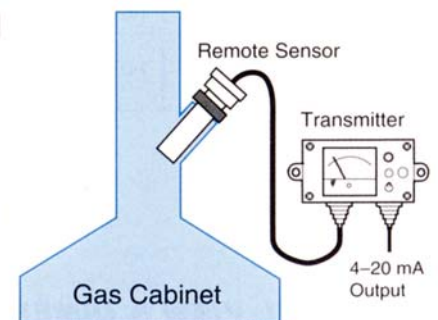


Application Example-Wet Scrubber/Gas Cabinet Monitoring

Monitoring the effectiveness of wet scrubber system is one of the most challenging semiconductor monitoring applications. Conditions are harsh. Maintenance is difficult. And the detection of reactive gas 'breakthrough' must be virtually instantaneous. The Bionics wet scrubber stack monitoring system is designed specifically for difficult emission monitoring applications. The sensor mounts right in the stack, so there's no need to run sample line or install auxiliary sample conditioning systems.



Wet Scrubber



Gas Cabinet



We reserve the right to change specifications without notice.

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