

▶ SPM FLEX

Optical toxic gas analysis system



Technical specifications

Detection technique: Chemcassette® detection system (chemical cassette with 7 specific gas families)

Use: Device used for both fixed and portable detection

Flow system: Automatic flow control with internal bypass system, sampling up to 30.48 m

User interface: 4 large buttons, 3.5" color LCD screen, web server

Alarm threshold: 2 levels generally defined at half the exposure limit value and when it is reached

Response time: 10 seconds

Alarm indication: Visual (LED), Sound (Siren: 90 dB at 1m)

Output signals:

- Concentration + fault alarm relay (SPDT)
- Linear outputs 4-20 mA - Copy of the measurement signal

Ethernet communication:

- USB 2.0 or later port
- Digital screen

Data recording: Up to 3 months (one measurement every 15 seconds without gas reading, 1 measurement every second in the presence of gas) - 1500 last events

Relay ratings: 250 Vac at 6 A

Operating temperatures: 0 to 40 ° C (basic device)

Power supply: 100 - 240 Vac / 50 - 60 Hz

Battery: Lithium ion

Battery life: 6 hours depending on use

Housing: fiberglass

Protection: IP65 NEMA 4X

Dimensions / Weight: H x W x D: 312 x 183 x 163 mm / 4.1 kg

Certification:

- UL 61010-1 / CSA-C22.2
- IEC 61010-1

Product description

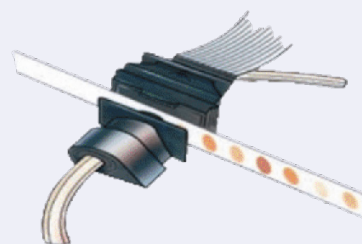
The **SPM FLEX** is a very efficient optical analysis system for toxic gases with a fast response time, insensitive to interferences and using the patented **Chemcassette®** technology. It is particularly suitable for monitoring very dangerous gases such as nitric acid (HNO₃), sulfuric acid (H₂SO₄) or isocyanates (TDI, HDI, MDI).

This advanced technology combines the color change of a chemically impregnated strip of paper with a very powerful optical analysis system. Measurements are targeted, precise and rapid at extremely low concentration levels, in ppb (parts per billion).

▶ Operating principle

The gases sampled by means of a sampling pump are sent to a chemically impregnated paper strip. In reaction with the target gas, the paper strip will change color to be analyzed by a very powerful optical system.

It is a very precise analysis method of the most sensitive gases, such as hydrides, mineral acids, oxidants or amines.



▶ Main advantages

- Patented Chemcassette® technology insensitive to interference
- Integrated sampling pump
- Rapid response for the detection of a target gas
- Sensitivity to gas (in ppb) with physical proof
- Interchangeability of Chemcassette®
- Reduced maintenance and no dynamic calibration required
- Digital concentration display
- Ethernet computer communication (MODBUS TCP / IP)
- USB port for data recovery
- More than 50 available gases (toxic, corrosive or pyrophoric)

▶ A configuration adapted to each application

The SPM FLEX detector has numerous options ensuring reliable detection for each particular application:

- Fixed or portable version with battery
- The capacity of the sampling pump can be up to 30 meters for certain gases
- Possibility of adding a remote display and a remote alarm acknowledgment



Type	Gas	Range	Minimum alarm limit	Default alarm		Response time T50	Max tube length	Filter type	ChemCassette		
				A1	A2				Code 14 days	Code 30 days	Code 90 days
Hydrides	Arsine (AsH3)	0.5-500 ppb	1 ppb	2.5 ppb	5 ppb	55	30	A	1265-4000		1265-3000
	Phosphine (PH3)	3-3000 ppb	5 ppb	150 ppb	300 ppb	6					
	Diborane (B2H6)	5-1000 ppb	10 ppb	50 ppb	100 ppb	14					
	Silane (SiH4)	0.03-50 ppm	0.05 ppm	2.5 ppb	5 ppb	13					
	Germane (GeH4)	50-2000 ppb	100 ppb	100 ppb	200 ppb	245					
	Hydrogen selenide (H2Se)	2-500 ppb	5 ppb	5 ppb	50 ppb	14					
	Hydrogen sulfide (H2S)	1-10000 ppb	5 ppb	5 ppb	1 ppb	7					
Mineral acids	Hydrogen fluoride (HF)	0.02-20 ppm	0.03 ppm	1 ppm	2 ppm	7	5	B, C	1265-4001		1265-3001
	Hydrogen chloride (HCl)	0.02-20 ppm	0.03 ppm	1 ppm	2 ppm	5					
	Hydrogen bromide (HBr)	0.02-10 ppm	0.03 ppm	1 ppm	2 ppm	5					
	Boron trifluoride (BF3)	0.02-10 ppm	0.1 ppm	0.5 ppm	1.0 ppm	5					
Mineral acids (export not limited)	Hydrogen fluoride (HF)	0.4-20 ppm	0.4 ppm	1 ppm	2 ppm	7	5	B, C	1265-4012		1265-3012
	Hydrogen chloride (HCl)	0.02-20 ppm	0.03 ppm	1 ppm	2 ppm	5					
	Hydrogen bromide (HBr)	0.02-10 ppm	0.03 ppm	1 ppm	2 ppm	5					
	Boron trifluoride (BF3)	0.05-10 ppm	0.1 ppm	0.5 ppm	1.0 ppm	5					
	Nitric acid (HNO3)	0.02-20 ppm	0.05 ppm	1 ppm	2 ppm	15					
	Sulfuric acid (H2SO4)	5-750 ppb	10 ppb	25 ppb	50 ppb	2000	0.1	aucun filtre			
Oxidizers	Chlorine (Cl2)	0.005-5 ppm	0.02 ppm	0.25 ppm	0.5 ppm	7	30	B,C	1265-4002		1265-3002
	Fluorine (F2)	0.01-10 ppm	0.05 ppm	0.5 ppm	1.0 ppm	5	6		1265-4004	1265-3004	
	Nitrogen dioxide (NO2)	0.03-10 ppm	0.05 ppm	0.1 ppm	0.2 ppm	56	30				
	Chlorine dioxide (ClO2)	20-1000 ppb	25 ppb	50 ppb	100 ppb	36	15				
Amines	Ammonia (NH3)	0.01-150 ppm	0.05 ppm	12.5 ppm	25 ppm	5	30	B, C	1265-4003		1265-3003
	Dichlorosilane-DMA (H2Cl2Si)	0.5-50 ppm	0.1 ppm	2.5 ppm	5 ppm	10					
	Tetrakis (Dimethylamino) titanium (TD-MAT) (C8H24N4Ti)	0.01-20 ppm	0.05 ppm	1 ppm	2 ppm	14					
	Trimethylamine (TMA) (C3H9N)	0.5-50 ppm	0.1 ppm	2.5 ppm	5 ppm	10					
Phosgene	Phosgene (COCl2)	7-4000 ppb		50 ppb	100 ppb		30	A	1265-4007		1265-3007
Diisocyanates	Toluene diisocyanate (TDI) (C9H6N2O2)	0.5-200 ppb	0.5 ppb	1 ppb	2 ppb		0.15	aucun filtre	1265-4006	1265-3006	
	Ethylene biphenyl isocyanate (MDI) (C15H10N2O2)	2-60 ppb		2.5 ppb	5 ppb						
	Hexamethylene diisocyanate (HDI) (C8H12N2O2)	2-60 ppb		2.5 ppb	5 ppb						
Hydrazines	Hydrazine (N2H4)			5 ppb	10 ppb		3	aucun filtre	1265-4008	1265-3008	
	Monomethylhydrazine (MMH) (CH6N2)	3-2000 ppb		5 ppb	10 ppb						
	Dimethylhydrazine (UDMH) (C2H8N2)	3-2000 ppb		5 ppb	10 ppb						
	Hydrogen cyanide (HCN)	0.5-30 ppm		2.4 ppm	4.7 ppm		30	A	1265-4009		
	Sulphur dioxide (SO2)	5-2500 ppb		120 ppb	250 ppb		31	B, C	1265-4005	1265-3005	
	Ozone (O3)	10-1000 ppb		50 ppb	100 ppb		31	aucun filtre	1265-4011	1265-3011	
	Hydrogen peroxide (H2O2)	0.1-3 ppm			100 ppb		15	aucun filtre	1265-4010	1265-3010	