Model 103 Photoionization (PID) Analyzer for VOC's (ppm & optional ppb)

Measure

VOC's
ppm,
benzene
1,3 BD
ETO
TCE
PCE
VCM
THC
H_2S
NH_3
1,3 BD
Hg
N_2O
O_2
PCE
others:
Call us

Technologies

Photoionization (9.5, 10.0, 10.6, 11,7 eV), Infrared CO_2, CH_4,N_2O, Electrochemical (H_2S, CO , HCN, Cl_2, PH_3, AsH_3, ETO, formaldehyde,...)

From the developers of the first PID in 1974

M 103 PID for VOC's & Toxics

Wireless connectivity-PC, Server, Cell, GPS

PID ANALYZERS, LLC

Hydroarbons, VOCs, LEL (IR), IR {CH_4, CO_2, N_2O,} CO_2, H_2S, ETO, NH_3, PH_3, AsH_3, benzene, TCE, PCE, 1,3 butadiene, TCA, Formaldehyde,

FIELD PORTABLE ANALYZERS

Model 103 - PID -Analyzer for Total VOCs & Hydrides in Air & Water

HNU Systems, Inc. introduced the first commercial photoionization based instrumentation in 1974. In 2003, the company name and incorporation was changed as we became **PID Analyzers, LLC**. Nearly 50,000 of the portable and and laboratory PIDs have been sold throughout the world. Dr. Jack Driscoll, inventor of the PID, received the AIHA Edward Baier award in 2017 (https://bit.ly/2rRG6M8) for the development of the PID for industrial hygiene measurements. More than 50 United States Environmental Protection Agency and Occupational Safety & Health Administration (OSHA) methods have been published in the Federal Register. Many states have adopted these methods for VOC's.

Principle of Operation

The process occurs when a molecule absorbs light of sufficient energy to ionize a molecule see below:

RH + hv = RH+ + e-

where

RH is a molecule of gas

hv is a photon with an energy greater than or equal to the ionization potential of the molecule RH.

The ultraviolet lamp generates photons that ionize the molecule RH (above) and generates positive ions. An accelerator electrode (positively biased) pushes the ions, to the collector elctrode where the current (proportional to concentration) is generated, amplified and displayed on the digital meter.

FEATURES

PID -VOC's ppm

- PID (9.5, 10.0, 10.6, or 11.7 eV) lamp interchangeable by customer
- Battery 3.7V LiPO UN 38.3 passed, w charger
- Display: bright 2.4" OLED
- Controls: Menu with Cal, QC,
- Range: 0-5,000 ppm, Resolution 0.1 ppm
- Size: 6 ½" L, 2.75" W, 1.75" H
- Weight: 1.0 #
- Communication: WiFi, Blue tooth, RS232
- Real time clock, GPS
- Data collection on server or PC: Data-Date, Time, Concentration
- Internal Memory:> >100,000 points
- Data transfer to IPhone, Android or PC

Humidity correction for RH up to 90%

PID, O_2, IR- CO_2, HC (CH_4, N_2O)

Applications:

Non-specific- M60 PID- Responds to VOC's & inorganic hydrides
Safety,
Industrial Hygiene surveys.
Accelerants at Arson scenes,
Hazardous waste spills and site evaluations, transportation,
Total VOC's in Air, Water and Soil
Inorganic hydrides: H_2S, NH_3, PH_3, AsH_3
Semiconductor plant leaks of PH_3, AsH_3
Mercaptans in air and water
Mercury in air or water
Headspace- VOCs in soil or water
Quality control- residual monomer in resins, residual solvents in paper or food, testing gas masks, residual gases in cylinders
Emergency response- spills from trucks & trains
Fugitive emissions- leak detection
Arson investigations- find trace accelerants
Confined space entry- health & safety

In addition, **a library of compounds > 300 for the 9.5, 10.6 and 11.7 eV is available** for selection by the customer.

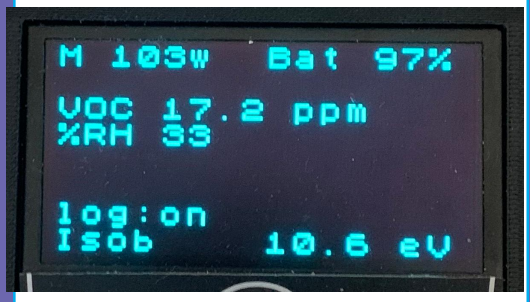
Options

- IR sensor for CO_2 ppm or % (3 selectable ranges)
- **or** IR sensor for CH_4 ppm or % (3 selectable ranges)
- Electrochemical sensor - 2 or 3 selectable sensors
- Hard Carrying case
- Calibration kit (cal gas plus regulator)

Menu

The 3 button display has a select button in the middle and up and down arrows to change the menu position.The menu selection is:
The startup display has the lamp, compound set as, PPM VOC, Log on/ Off, Battery %, & alarm info
The **Run** display has a larger ppm reading lamp info and respond as
Calibrate- press select (S) to enter and calibrate with zero filter and span gas, The user is asked to connect the gases and when to press S
The **Library** has selection for 9.5, 10.6 or 11.7 eV lamps and separate libraries for each lamp. Isobutylene is used as the cal gas, then the Respond As will give the response the the gas of choice
Background zero is used to set the background air to zero **Setup**- for lamp type,alarm, or additional IR or EC sensor

The Model 103 has a 2.30" bright OLED display as shown below:



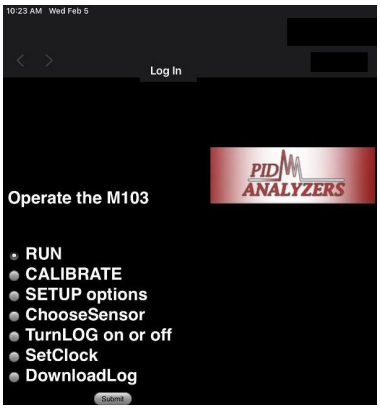
IPhone display and OLED Display for Model 103

Table I Excel File Transferred to PC

Sample	Compound	ppm	ppm	%	Date	Time
	as	PID	IR CO_2	O_2		
1	Isob	3.1		20.8	"5/27/18'	"7:53AM"
2	Isob	2.7		20.8	"5/27/18'	"7:59AM"
3	Isob	9.3		20.8	"5/27/18'	"8:10AM"
4	Isob	10.6		20.8	"5/27/18'	"8:25AM"
5	Isob	36.1		20,8	"5/27/18'	"8:50AM"
6	Isob	79.5		20.8	"5/27/18'	"9:05AM"
7	Isob	33.9		20.8	"5/27/18'	"917:26AM"
8	Isob	8.4		20.8	"5/27/18'	"9:29AM"

Data printout from PC

103 Cell Phone Interface



PID ANALYZERS

PID ANALYZERS, LLC

2 Washington Circle, Sandwich, MA 02563

Tel. 1-774-413-5281 USA, Fax. 1-774-413-5298 Web: http://www.hnu.com E-mail: sales@hnu.com

HNU Nordion, Ltd, OY, Atomitie 5 A 3, PL 1, Helsinki, Finland Tel. +358-9-565 7240 Fax +350-9-562 6801

Web: http://www.hnunordion.fi E-mail: Info@hnunordion.fi