

PFAS and CHEMICAL

PORTABLE FAST GAS CHROMATOGRAPH SYSTEM

Model ~ PFAS-TA-F

FEATURES:

- DETECTS PFAS AND HYDROCARBONS – C4 TO C25
- AIR OR WATER
- PORTABLE – FIELD READY
- **PFAS-TA-F identifies vapors as low as 1 PPT (parts-per-trillion) in just 5-60 seconds.**
- SELF CONTAINED
 - INTERNAL SAMPLE PUMP
 - INTEGRATED COMPUTER
- QUANTITATIVE
- QUALITATIVE ANALYSIS
- LOCKING SENSOR POSITION
- EXCEPTIONAL SENSITIVITY
- ANALYZE VAPORS IN 30-60 SECONDS
- DATA STORAGE & ARCHIVE
- COMPUTER INTERFACE USB PORT



APPLICATION:

The PFAS-TA-F Vapor detector and analyzer is a field ready fully integrated system for air or water. With an internal sampler pump and integrated computer, the PFAS-TA-F identifies vapors as low as 1 PPT (parts-per-trillion) in just 5-60 seconds. EPA's proposed regulation limit for PFOA and PFOS is 4 ppt. This field model provides immediate measurement of PFOA and PFOS. Laboratory analysis is expensive and may take a weeks or more for results.

Rapid, on-the-spot PFAS contamination testing below the EPA's limit and can be configured for either water or air samples.

A proprietary Surface Acoustic Wave (SAW) detector results in a system with previously unattainable sensitivity in a portable low-cost package.

DESCRIPTION:

- Carrier Gas: Helium, Typical 200 - 300 tests per day per charge
- Analysis Time: 30– 60 Seconds
- Display: Windows any version

Utilizing a trap and helium carrier gas, the PFAS-TA-F injects samples into a heated column and separation takes place. Materials sequentially exit the column and are deposited on the SAW detector. The deposit results in a change in the oscillating frequency of the resonator directly proportional to the mass.



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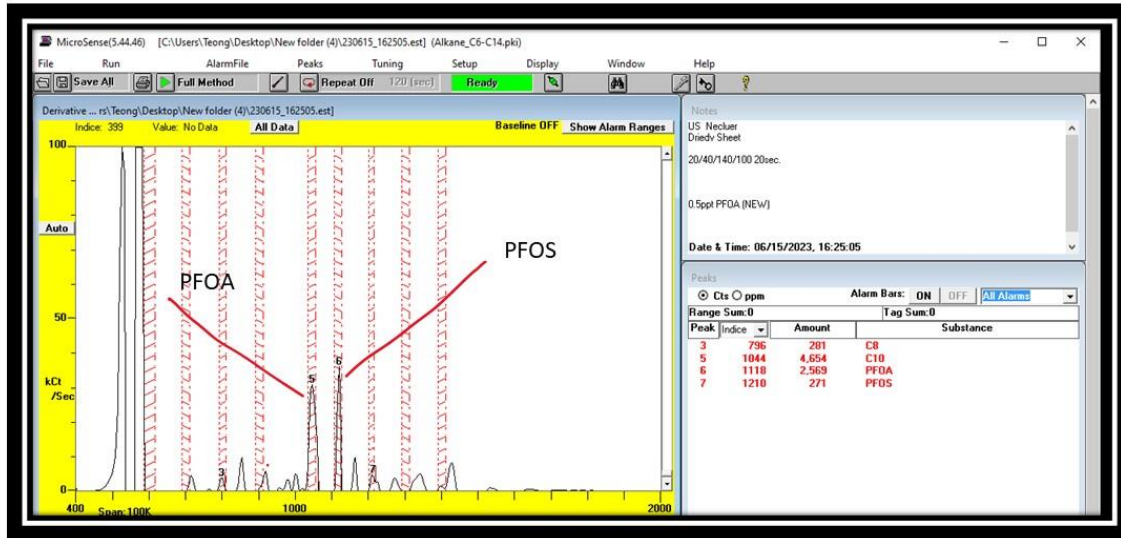
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THE PFAS AND CHEMICAL DETECTION SYSTEM EXPLAINED

Sheet of AEM membrane
(20.40.140.100 Pump 10sec) Weight 364mg slice



Weight is AEM Membrane: 364mg slice

Heated to 32 degrees C

The graphic shows that there is PFOA and PFOS present

UNIQUE DETECTION

- Recognizes full chemical signature
- Provides a complete chemical profile
- Has an expandable library of 700+ chemical signatures
- Ultra-high-speed chromatography
- Same time pattern recognition and trace detection
- Adapts and learns to recognize threat signatures



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HOW IT WORKS

- A Q surface acoustic wave (SAW) interferometer is the key component
- Individual analyte peak half-width is measured in seconds
- Every picogram of material is collected on the surface of the temperature-controlled quartz crystal.
- An image of the chemical pattern is obtained from the frequency of the SAW resonator.
- The SAW interferometer produces a resonance frequency proportional to the amount of column effluent deposited on the quartz surface.
- A complex ambient environment is viewed and recognized via a its image

This unique method and function is a rapid and accurate process for PFAS and other chemical detection. The benchtop model **PFAS-L** and the field model **PFAS-F** provide researchers with a process that stands out from other market methods.

SPECIFICATIONS:

DETECTOR:	Surface Acoustic Wave (SAW) Quartz microbalance
Dynamic Range:	10 ⁵
Temperature:	0° C to 150° C, programmable
Detects:	C4 to C25
Sensitivity:	PFAS-F 1 part per trillion in 5-60 seconds. For many compounds in 10 seconds. Sensitivity will vary by compound sampling time, matrix, interferences & detector temperature ranges.
Accuracy:	<2% standard deviation
Dynamic Range:	10 ⁶ ±10%
Recycle Time:	30 sec minimum
SAMPLING:	
Sample Pump:	Internal
Sample Introduction:	~.5 ml/sec
Sample Time:	1-300 seconds, User Settable
Sample Absorption:	Internal tenax preconcentrator
Carrier Gas:	Helium, (Min 99.999% purity, #6) Replaceable Cylinder 95cc at 17.6MPz (2560 psi) Typical use is 200 - 300 tests per day on one helium charge
Compound Identification:	Automatic with user calibration



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COLUMN:

Limits: 35°C to 225°C -depending on column
Ramping: 1 – 18° C/sec

Display: 10.8 in Clear Type Full HJD Plus
Resolution: 1920 x 1280
Screen: 10 Point Multi-Touch Surface Pen

ENVIRONMENT:

Operating Temperature: 32°F to 105° (0°C to 40°C)
Relative Humidity: 0 – 95% non-condensing

Power: Battery Pack: 28V DC, 16 AHr Lithium Ion (5 hr typical)
Charger Power: 100 – 127 VAC at 3 amps – 50/60 Hz;
200 - 240 VAC at 1.5 amps – 50/50 Hz

INLET CONNECTION / TEMPERATURE

Inlet Port: Stainless steel LUER
Temperature: 50°C to 200°C

DATA DISPLAY, STORAGE & TRANSFER: Laptop and USB _ USB Port

WEIGHT & DIMENSIONS:

DISPLAY:

Weight: 1.4 lbs (64 g)
Length: 10.52 in (26.7 cm)
Width: 7.4 in (18.7 cm)
Thickness: .34 in (.86 cm)

SUPPORT:

Weight: 18.7 lbs (8.5 kg)
Length: 12.5 in (31.8 cm)
Width: 9.7 in (26.4 cm)
Height: 5.8 in (14.5 cm)

HEAD:

Weight: 5.7 lbs (2.6 kg)
Length: 15.0 in (38.1 cm)
Width: 4.3 in (10.9 cm)
Height: 6.8 in (17.3 cm)

CHARGER:

Weight: 7.7 lbs (3.5 kg)
Length: 13.5 in (34.25 cm)
Width: 9.7 in (14 cm)
Height: 3.7 in (9.5 cm)



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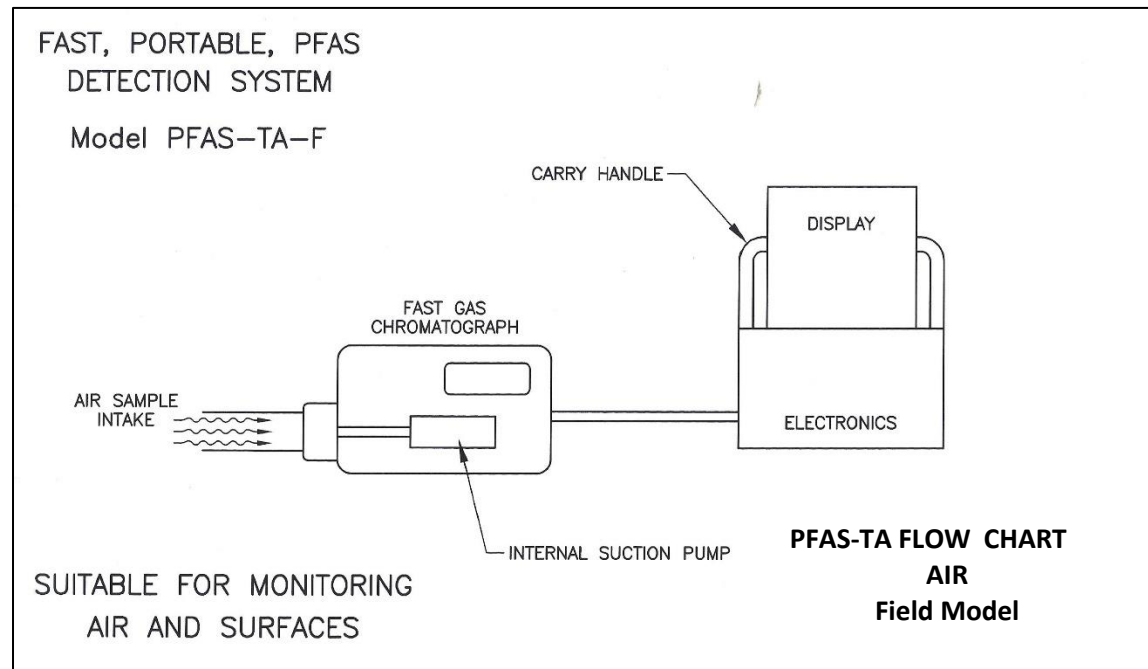
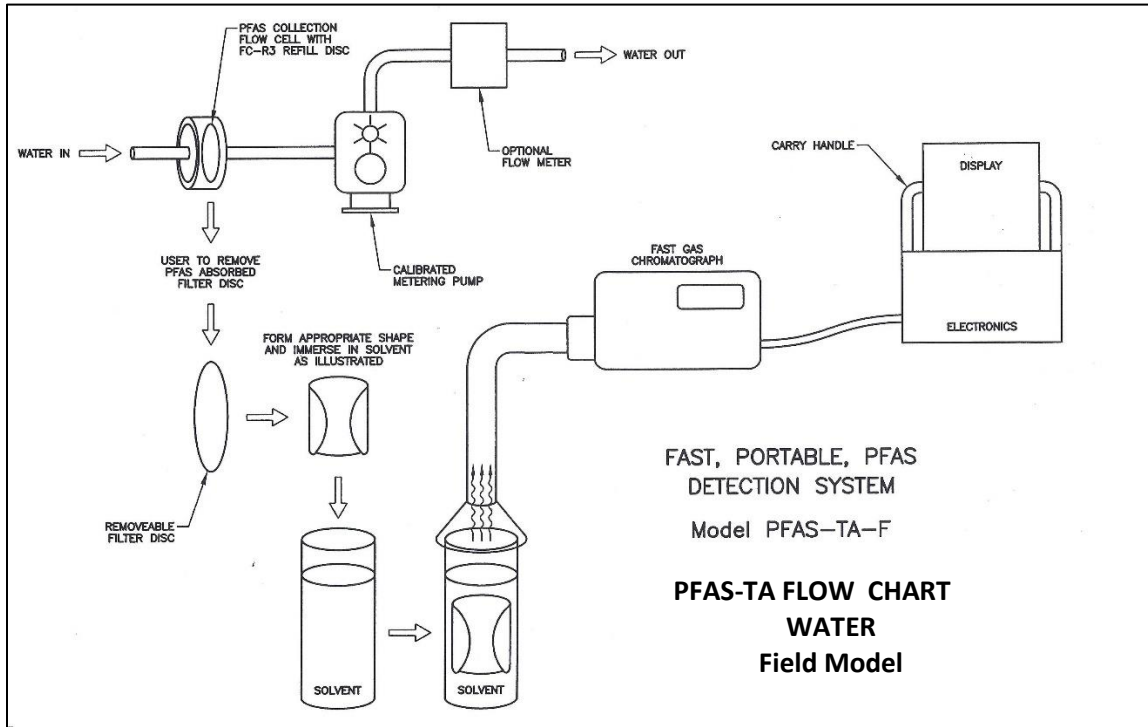
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