



Tiger-i 2000 CH₂O

Trace Formaldehyde Monitor for Ambient Air Applications

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LABORATORY

Designed for formaldehyde analysis in laboratory, process, and indoor air quality applications, as well as the detection of Airborne Molecular Contaminants (AMCs), the Tiger-i 2000 CH₂O offers:

- Accuracy traceable to the world's major national reference labs
- Freedom from the need for span calibrations
- No periodic sensor replacement/maintenance
- Single figure ppb detection limit
- Wide dynamic range and no drift
- Fast response
- Compact and rugged design

Advancing Accurate, Consistent & Drift-Free CH₂O Measurements

Formaldehyde (CH₂O) is a known human carcinogen and as such the accurate and effective measurement of this pollutant in our environment is critical. Indoors, formaldehyde is present in many man-made materials such as pressed wood products, carpets, and adhesives. We are also exposed to formaldehyde when using modes of transport powered by the combustion of fossil fuels. CH₂O is also a key impurity in fuel cell hydrogen, where it is responsible for the degradation of the proton exchange membrane within the fuel cell, adversely affecting performance.

Tiger Optics delivers a powerful analytical tool for the measurement of trace CH₂O for diverse applications. Based on powerful Cavity Ring-Down Spectroscopy (CRDS), with a proprietary laser-locked cell, the Tiger-i 2000 is free of drift, guaranteeing consistent and reliable trace CH₂O detection in ambient air. Highly specific to the target molecule, CRDS also prevents cross-interferences from distorting your measure-

ment*. Plus, there is no need to perform costly and time-consuming zero and span calibrations, saving both time and money with continuous, on-line service.

The Tiger-i 2000 CH₂O gives you unsurpassed speed of response and ease of use. In sum, the Tiger-i 2000 CH₂O analyzer serves a range of applications where trace gas measurement is extremely critical, such as indoor air quality monitoring, assessing outgassing from building materials, and optimization of vehicle powertrains. The Tiger-i 2000 CH₂O builds on Tiger Optics longstanding leadership for trace monitoring of critical compounds.

* Water is the exception. A Nafion drier is required to remove water from ambient air and minimize interference. Stated analyzer performance specifications can be achieved only in combination with this drier. Details available on request. Nafion drier can be supplied with analyzer.

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21ST CENTURY SPECTROSCOPY

Tiger-i 2000 CH₂O

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Performance	
Operating range	See table below
Detection limit (LDL, 24 h peak-to-peak variation)	See table below
Sensitivity (3σ)	See table below
Precision (1σ, greater of)	± 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	± 4% or LDL
Speed of response	See table below
Environmental conditions	10°C – 40°C 30% – 80% RH (non-condensing)
Storage temperature	-10°C – 50°C

Gas Handling System and Conditions*	
Wetted materials	316L stainless steel (optional Hastelloy®) 10 Ra surface finish
Gas connections	1/4" male VCR inlet and outlet
Leak tested to	1 x 10 ⁻⁹ mbar l / sec
Inlet pressure	0 – 15 psig (1 – 2 bara)
Outlet pressure	Vacuum (<10 Torr)
Flow rate	1 slpm
Sample gases	Ambient air, dry air (CDA) or N ₂
Gas temperature	Up to 60°C

Dimensions	H x W x D [in (mm)]
Standard sensor	8.75 x 8.5 x 23.6 (222 x 216 x 599)
Sensor rack (fits up to two sensors)	8.75 x 19 x 23.6 (222 x 483 x 599)

Weight	
Standard sensor	33 lbs (15 kg)

Electrical	
Alarm indicators	2 user programmable 1 system fault Form C relays
Power requirements	90 – 240 VAC, 50/60 Hz
Power consumption	40 Watts max.
Signal output	Isolated 4–20 mA per sensor
User interfaces	5.7" LCD touchscreen 10/100 Base-T Ethernet 802.11g Wireless (optional) RS-232

Performance, CH ₂ O:	Range	LDL	Sensitivity	Speed of Response
In ambient air†	0 – 200 ppm	100 ppb	75 ppb	3 min to 95%

* Oil-free vacuum source required, <10 Torr ultimate vacuum, >1 m³/h pumping speed

† Sample conditioning system required

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