SEMTECH

HI-FLOW 2

NSPS Subpart OOOOb is here.

sensors

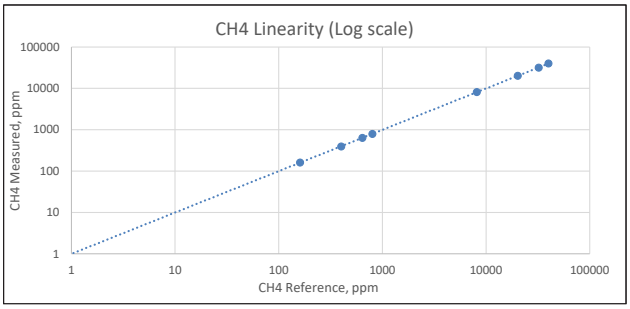
Are you ready to meet the demands of fugitive methane quantification?

Be sure you (& your high flow sampler) are OOOOb ready (& compliant)!

SEMTECH HI-FLOW 2 meets these demands.

White Paper available upon request.

OOOOb demands[1]:	SEMTECH HI-FLOW 2 delivers:
Training	
"The fugitive emissions monitoring plan" and "the records of each monitoring survey" requires "training, and experience of the operator(s) performing the survey"	Complete training offered through HI-FLOW 2 distributors' experienced personnel.
Measures Large and Small Leaks with Confidence	
"The flow measurement sensor must have a measurement range over the entire expected range of flow rates sampled."	The HI-FLOW 2 provides direct quantification of leaks over very large dynamic range (0.0005 to 25 CFM).
"The methane sensor(s) must have a measurement range over the entire expected range of concentrations."	Best in class.
Keeping your HI-FLOW 2 in Compliance	
"You must collect at least three separate one-minute measurements and determine the average leak rate."	The HI-FLOW 2 web-based software generates OOOOb-compliant reports.
"Prior to and at the end of each testing day, challenge each sensor at two points, a low point, and a mid-point, using methane gaseous calibration cylinder standards."	The HI-FLOW 2 field test campaigns have demonstrated easy compliance to the OOOOb 10% requirement.
"At each point, the difference between the cylinder value and the sensor reading must be less 5 percent of the respective calibration gas value. If the post-test calibration check fails at either point, invalidate the data from all tests performed subsequent to the last passing calibration check."	The HI-FLOW 2 has a 100% margin (2.5% manufacturer's criteria) compared to 5% OOOOb. Internal software utilities for user linearity performance validation/compliance. ONLY two reference gas bottles required to meet the OOOOb 2 points per gas sensor requirement.
Annual Integrity Requirements	
"Flow measurement sensors … must be calibrated on an annual basis."	The HI-FLOW 2 flowmeter is calibrated initally and annually, as shown in Sensors' calibration certificates.
"Initially and on a semi-annual basis, determine the linearity at four points through the measurement range for each methane sensor using methane gaseous calibration cylinder standards."	Methane sensors are calibrated initally and annually for linearity and accuracy to 2.5% and then checked six months later to 5% criteria.



Methane Analyzer Linearity Results

Statistic	Result	Criteria	Pass/Fail
Intercept	-0.013%	+/- 1% max	Pass
Slope	0.996	0.975-1.025	Pass
SEE	0.233%	+/- 1% max	Pass
R^2	1.000	≥ 0.998	Pass

Description	Test date	Due date	Pass/Fail
Methane sensor Linearity and accuracy (2.5% criteria)	14-Mar-24	initial installation or every 12 months**	Pass
Methane Sensor span and dilution calibration	14-Mar-24	initial installation*	Pass
Methane sensor noise	14-Mar-24	initial installation or every 12 months	Pass
Methane sensor interferences	14-Mar-24	initial installation*	Pass

* All validation tests are required after major maintenance

Design Requirements

"The methane sensor(s) must be selective to methane with minimal interference, less than 2.5 percent for the sum of responses to other compounds in the gas matrix. You must document the minimal interference though empirical testing or through data provided by the manufacturer of the sensor."

The HI-FLOW 2 meets NIST traceable certification to <2.5%.

Methane Analyzer Interference Results (< 2.5% of interfering gas criteria)

Gas	Bottle value (ppm)	Measured CH4 (ppm)	Interference (%)	Pass/Fail
Ethane	405	-4	-1.1%	Pass
Propane	2653	0	0.0%	Pass

[1] ENVIRONMENTAL PROTECTION AGENCY 40 CFR Part 60 [EPA–HQ–OAR–2021–0317; FRL–8510–01– OAR] RIN 2060–AV16 Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review
Federal Register / Vol. 89, No. 47 / Friday, March 8, 2024 / Rules and Regulations
https://www.govinfo.gov/content/pkg/FR-2024-03-08/pdf/2024-00366.pdf

HI-FLOW 2 is a robust, portable, battery powered, high volume sampler for the accurate quantification of fugitive methane emissions.

The combination of the Analyzer and the Sampler (with a variety of sampling adapters) allows the entire fugitive methane emission to be captured, diluted, and quantified accurately.

By utilizing Tunable Diode Laser Absorption Spectroscopy (TDLAS) combined with an innovative sampling system, accurate concentration measurements of fugitive methane over 4 to 5 orders of magnitude can be performed without any cross-interference from other gases present in the captured leak.

Analyzer - Portable control module (which can be carried, placed on the floor, or mounted to a backpack) housing the gas sensor technologies, control electronics, and battery pack.

Sampler - Handheld device with a high-volume vacuum sampling fan and total flow rate monitor

For over 50 years, Sensors, Inc. has built a reputation for gas and particulate measurement products under the SEMTECH brand in the automotive industry. Sensors' fugitive methane analyzer brings to bear our emission measurement experience into the oil and gas industry with a focus on leak detection and repair (LDAR).

SPECIFICATIONS

Total Flow Rate*	5-30 CFM (upper limit dependent on accessories)
Measurable Leak Rate*	0.0005 to 25 CFM (0.015 to 700 lpm)
Leak Rate Accuracy	<5% of full scale or 15% of point, whichever is lower
Dimensions (W x D x H) Electronics and Gas Module	12 x 12 x 5.7 in. (30 x 30 x 14.5 cm)
Dimensions (W x D x H) Handheld Unit w/o extension	26.3 x 7.5 x 10.5 in. (66.8 x 19 x 12.7 cm)
Weight (Electronic and Gas Module)^	17.5 lbs. (7.9 Kg)
Weight (Handheld Unit)	10.8 lbs (4.9 Kg)
Data transmission	Wi-Fi

*Inlet restrictions on the handheld sampling unit will reduce the maximum achievable flow.

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