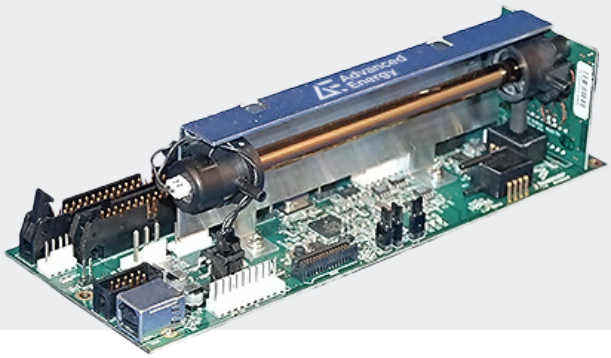
ANDROS 6511

OEM gas analyzer for greenhouse gas detection and monitoring.



The Andros® 6511 OEM gas module achieves high reliability through simplicity of design and implementation. Andros Non-Dispersive Infrared (NDIR) gas modules are inherently reliable because there are no moving parts in the optical path. Unlike alternative analyzers that require motors, gratings, chopperwheels, and/or other moving components with limited useful lives, Andros gas analyzers use a pulsed infrared source to achieve high accuracy with high reliability.

Unlike other infrared analyzers, Andros non-dispersive infrared (NDIR) gas analyzers measure multiple gases in an instrument with a single optical path platform. Single-gas analyzers are inadequate when using methane as a bio fuel because the gas often contains large amounts of CO_2 as a contaminant. Andros analyzers have the ability to measure CO_2, CO, and O_2 in addition to methane and therefore provide the optimal combination of gases for combustion optimization.

PRODUCT HIGHLIGHTS

- Measure up to five gases: three via NDIR and two via plug-in sensors
- RS232 or USB1 outputs
- Fast response times
- User-selectable reporting: Either propane for non-methane fuels or methane

OVERVIEW

Who Will Benefit from Methane Measurement?

- Landfill operators that burn methane in flares, power generators, and boilers.
- Industrial operators of methane fueled boilers, furnaces, and incinerators.
- Agricultural methane capture for local use or transfer to pipelines.

The 6511 has a very wide dynamic range: CO_2 up to 20%, Methane up to 100% and CO up to 20%. This wide dynamic measurement range with real-time temperature and pressure compensation provides the capability to monitor anaerobic digestion processes and control of these processes to maximize methane production. Adding an optional oxygen measurement provides the capability to monitor the combustion efficiency of equipment that uses biogas as a fuel.

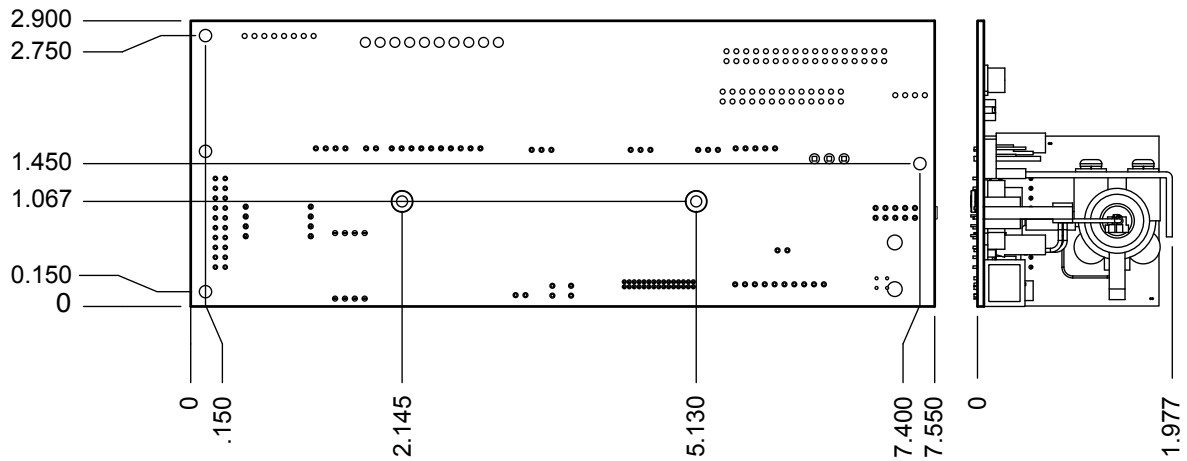
Necessary Features for Methane Applications

- Temperature and pressure data available for use in calculating pounds per hour of CH_4 and CO_2.
- Two electrochemical sensor inputs for a total of five gases from a single instrument.

Extensive Calibration For High Accuracy

Every Andros NDIR analyzer is individually calibrated at four separate temperatures between 0 and 50°C. At each of the four temperatures, the gas channels are profiled with up to 20 separate gas concentrations. The results of this extensive calibration process are stored within each system resulting in the most accurate analysis possible. This attention to detail provides a highly accurate and stable factory calibration of the NDIR analyzer. Our factory calibration is so accurate and stable that many of our customers have chosen to never re-calibrate their Andros analyzers. This type of calibration allows for wide dynamic measurement ranges that can permit field spanning in the measurement range of interest.

DIMENSIONS



All dimensions in inches

TECHNICAL DATA

Performance	
Response Time	Response times are specified at a sample flow rate of 1 liter per minute through the 6511 sample cell
Data Refresh Rate	1 second
Warm-up Time	30 minutes fully stable, 3 minutes for reduced accuracy unless zeroed prior to taking measurement
Warranty	1 year parts and labor warranty
Host Communication	USB or RS232C asynchronous serial; 19,200 bps or 9600 bps (default is 19,200)

Electrical Specifications	
Input Power	+12 Volts DC nominal (+9 to +16)
Power Consumption	1.8 Watts average @ 12 VDC

Physical Characteristics	
Dimensions (L x W x H)	19.18 x 7.37 x 5.03 cm (7.55" x 2.90" x 1.98")
Weight	0.3 kg (0.8 lb)

Environmental Specifications	
Operating Temperature Range	0 to 70°C (32° to 158°F), accuracy not specified > 50°C
Operating Humidity	To 95% RH (Non-condensing)
Operating Altitude	-300 to 3000 m (-1000 to 10,000 ft)

SPECIFICATIONS

Measurement Method	Gas	Resolution	Measurement Range	Accuracy	Precision	Response Time
NDIR (Non-Dispersive Infrared) on board	Methane	1 ppm	40 to 80%	±2% rel.	3.0% rel.	T_{90} and T_{10} < 30 Seconds
			80 to 100%	±5% rel.		
	Carbon Monoxide (CO)	0.001%	0.000 to 10.000%	±0.02% abs. or ±3% rel.	0.01% abs. or 0.8% rel.	
			10.001 to 15.000%	±5% rel.		
	CO_2	0.01%	0.00 to 16.00%	±0.3% abs. or ±3% rel.	0.03% abs. or 5% rel.	
			16.01 to 20.00%	±5% rel.		
Electrochemical sensors via connector	O_2	1 ppm	1.01 to 25.00%	±0.1% abs. or ±3% rel.	0.1% abs. or 1.5% rel.	<40 seconds from amb. to 0.1% O_2
	NO_2 and NO		Per MFG specs	Per MFG specs	Per MFG specs	Per MFG specs

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

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