



TELEDYNE ANALYTICAL INSTRUMENTS

exhaust analyzer



mini CO/HC

Teledyne's Mini Gas Module provides the ability to measure CO and HC in a package small enough to fit in the palm of your hand. The digital output, low power requirements and light weight make the Mini Module® ideal for incorporation into a hand held instrument for measuring exhaust gases from automobiles, stationary engines, marine engines and other gasoline engines such as motorcycles and lawn mowers.

Compact size and digital performance allow the manufacturer of monitoring equipment to add a new dimension to exhaust monitoring especially for state-of-the-art OBD-II diagnostic products. The ability to monitor gas mixtures and performance while the engine is under load is the most desirable method of properly tuning the engine for top performance. By adapting the Teledyne Mini Module to your diagnostic device, the engine can be properly tuned and performance quickly tested to assure proper engine performance.

Almost all gas monitors of this type are analog in output, high in power consumption, large and heavy. When comparing the Mini Module to current industry 2-gas systems, the advantageous features are a simplified command set, easy data acquisition and utilization, and easy zeroing of the module to assure drift free operation. Also consider the low cost for this digital output module. The Mini Module offers the OEM an opportunity to power by battery as well as other electrical standards. When a truly hand-held gas module is required, the Mini Module is the best solution.

The heart of this new technology is a proprietary folded optical system which allows the long path length necessary for gas accuracy to be compacted into a small package and combined with innovative software. The outcome is the Mini Module with an accurate and reproducible output to meet the needs of a hand-held device at a most affordable cost.

Mini CO/HC Analyzer Specifications

Model: MM-2G

Dimensions:

2" W x 2.5" L x 1.25" H
(50.8 mm W x 63.5 mm L x 31.8 mm H)

Weight:

6 oz. (170 grams)

Power:

1.5W

Power supply requirements:

+ 5V: 250mA
+12V: 10mA
- 12V: 10mA

Gases measured:

CO, HC as Hexane (normal power-on default)
or Propane (by command)

Data / Control interface:

Digital RS-232C, 9600 baud

Data rate:

4 data packets per second

Reported data:

CO %, HC ppm, temperature °C (ASCII character string, comma delimited, framed by CR)

Data resolution:

CO: 0.01%
HC: 1 ppm
Temp: 0.1°C

Data range:

CO: -0.5 to 7.5%
HC: Hexane = -200 to 2200 ppm
Propane = -400 to 4400 ppm
Temp: -55°C to 99.9°C

Data accuracy:

CO: +/-0.2 absolute or +/-10% relative
HC: +/-30ppm absolute or +/-10% relative
Temp: +/-2°C absolute or +/-5% relative

OEM commands:

Analyzer Zero - zero calibration on ambient air
Propane Mode - reports HC as propane for periodic field gas calibration
Normal Mode - returns to reporting HC as hexane for exhaust gas testing

Start-up time:

Able to measure gas within 30 seconds of power. Full accuracy within 15 minutes.

Zero time:

<30 seconds

Intrinsic response time:

<10 seconds to 95% final value @ 300 ml/min flow (Note 1)

OEM power & data:

Standard circular 8-pin Mini-DIN connector

OEM gas interface:

.118" DIA (3mm) tube fittings

Operating temperature:

5°C to 40°C

Gas flow rate:

200 to 400 ml/min

Note 1 Intrinsic response time is the time to reach 95% of final value for an instantaneous change in gas concentration at the analyzer gas input port at the specified flow rate.

Gas transport, water elimination, and particle filtering to a maximum 5 micron particle size are the responsibility of the OEM.

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

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