

MEC-R RICH-BURN AIR/FUEL RATIO CONTROLLER



- The only AFR that continuously monitors both Pre- and Post-catalyst exhaust chemistry.
- Assures compliance across load swings and changes in operating conditions.
- Improves engine and emissions control performance.
- Failsafe troubleshooting and diagnostics.
- Easy to install and use – fully automatic.

Variable Loads? Tough Compliance Challenges? This AFR Is For You.

Do you run rich-burn natural gas engines with variable loads under strict emissions limits? The MIRATECH MEC-R was designed for you. Compare it with any other air/fuel ratio controller on the market and we're betting you'll agree: the MEC-R gives you more for your money – with benefits no other AFR can match.

• **Ongoing compliance assured.** The MEC-R is the only AFR that monitors both Pre- and Post-catalyst exhaust, precisely adjusting the air/fuel mix to maintain targeted emissions

levels. The payoff: total assurance of ongoing compliance with emissions limits as low as 0.07 g/bhp-hr NO_x (with a properly specified MIRATECH catalyst) – regardless of variances in load, ambient air temperature, or fuel composition.

• **Advanced, built-in troubleshooting and diagnostics.** The MEC-R lets you pinpoint performance problems as soon as they occur – misfires, detonations, overheating, ashed catalysts and more. The payoff: lower costs for maintenance, downtime, labor, and replacement parts.

• **Incredibly easy to use.** Advanced technology doesn't have to mean time-wasting, manpower-diverting distraction from your core operations. The MEC-R gives you all the benefits of the state-of-the-art – with trouble-free, fully automated, set-it-and-forget-it ease of use.



P: 918.794.9365

www.miratechcorp.com

MEC-R: THE STATE-OF-THE-ART AFR FOR RICH-BURN NATURAL GAS ENGINES.



MEC-R Rich-Burn AFR

the efficiency of both the engine and its three-way catalytic converter.

Unlike other AFRs that cost about the same, the MEC-R measures *multiple engine parameters* and regulates the air/fuel mix with fast response and pinpoint accuracy. Sensible sensor inputs, responsive, full-authority fuel valves, and adaptive control logic restore emissions compliance quickly after abrupt transients and sustain compliance over a wide operating range. The result? Top performance, less operator intervention, and assured compliance with tight emissions limits.

And the MEC-R works all on its own. Set it – and forget it.

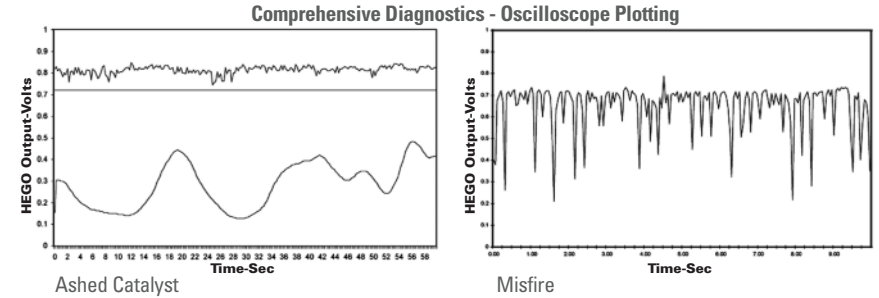
The MEC-R continuously monitors and precisely controls the air/fuel mix in rich-burn, carbureted natural gas-fueled engines. By maintaining the proper air/fuel ratio over varying engine loads, speeds, fuel quality, and ambient conditions, it maximizes

Benefits

- Ideal for applications with abrupt load/speed transients, broad operating load/speed ranges, and tight permit emissions limits as low as 0.07 g/bhp-hr NOx.
- Ongoing compliance assured.
- Optimized fuel efficiency.
- Easy to install, easy to set up, easy to use – minimal operator training.
- Set it and forget it: no operator needed in normal operation.
- Fail-safe troubleshooting and diagnostics, with automatic shutdowns – covering 38 critical parameters. – Eliminates operator guesswork and look-see troubleshooting.
- Flexible network compatibility – with high-speed data transfer capability.
- Software, upgrades, and documentation available on disk or online.

Technical Features

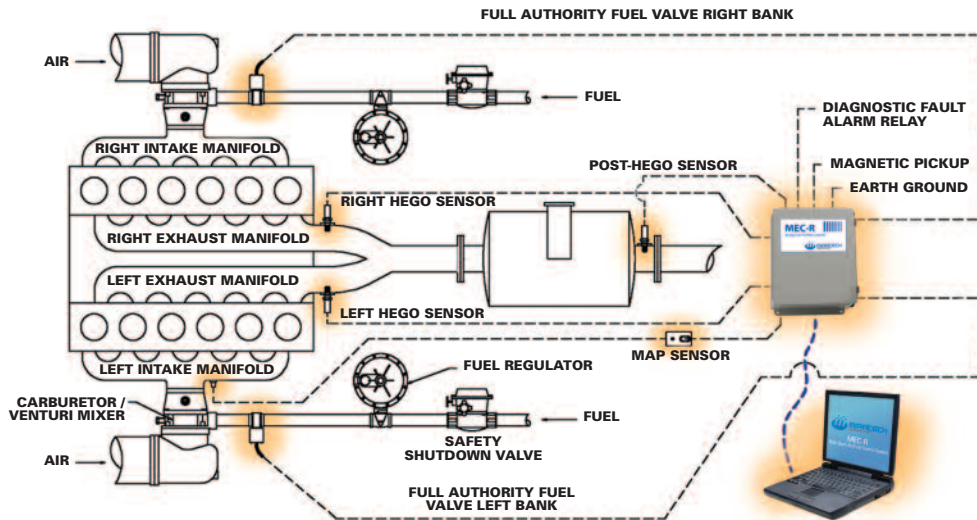
- Fits virtually any gaseous-fueled, carbureted, rich-burn industrial engine – with or without catalytic converter.



Comprehensive Diagnostics - Oscilloscope Plotting

time response to varying engine loads.

- Pre-catalyst Closed-Loop, exhaust oxygen feedback control.
- Post-catalyst exhaust chemistry measurement for fast, real-time adaptation to changing catalyst performance.
- Comprehensive 38-fault diagnostics – including oxygen sensor health monitoring.
- Data plotting for easy, accurate troubleshooting.
- Catalyst temperature monitoring to protect the catalyst from engine combustion malfunctions.
- Alarm and shut-down dry contacts.
- Windows®-based platform compatible with most computers. *Software can be installed on laptop, PC, or network.*
- RS-485/MODBUS® communications support for high-speed data transmission.
- NEMA 12 enclosure: 10" W x 13" H x 5" D.
- 24VDC, 4.8 amp max (application specific).



- Adaptive valve learn software: continually updates look-up tables for rapid transient response and continuous control in Open-Loop mode.
- Open-Loop valve positioning, based on engine speed and load. – Maintains compliance even with critical oxygen sensor malfunction.
- Full Authority Valve: controls all engine fuel via system-controlled butterfly valve.
- Drives up to two fuel-metering valves for vee engine configurations.
- Variable setpoint for Pre- and Post-catalyst exhaust oxygen control – for real-

The MEC-R is the only AFR that monitors both Pre- and Post-catalyst exhaust, precisely adjusting the air/fuel mix to maintain targeted emissions levels. The payoff: failsafe assurance of ongoing compliance with tight emissions limits – regardless of abrupt load/speed transients, or changes in fuel composition or ambient air temperature.

Learn more | Request a Proposal or Sales Consultation
918.794.9365 | www.miratechcorp.com



420 South 145th East Avenue, Mail Drop A
Tulsa, Oklahoma 74108 USA