



# MEC-L

## LEAN-BURN AIR-FUEL RATIO CONTROL SYSTEM

## Three Big Problems. One Cost-Cutting Solution.

If you run an engine lean, you may not think you need an air-fuel ratio controller. If you're thinking about most AFRC brands, you're probably right. Most just wouldn't earn their keep in your operation. But we're betting you'll think differently about the Compliance Controls MEC-L when you consider **three tough problems** you face everyday.

**1 Emissions Compliance.** Many operators think lean-burning engines comply with emissions regulations "right out of the box". In many areas, that may be true, at least when the engine is fresh from the box. But your engine may run thousands of hours after startup, each year – with varying loads, fuel composition and ambient air temperatures. With today's steadily tightening air-quality rules, can you afford the risk of non-compliance – not to mention an order to install expensive exhaust aftertreatment?

**2 Troubleshooting & Maintenance.** In any operation, engine problems – misfires, detonation, overheating and more – undercut performance. They can also cost you plenty, in maintenance, downtime, labor, and replacement parts. In harsh operating environments – deserts or at high altitude, for example – the risks are much greater. For one customer involved in coal-seam gas compression, environmental factors were causing tennis ball-sized holes to melt through pre-igniting cylinders and piston crowns.

**3 Operational Issues.** In any competitive arena, your business suffers when you're not getting the benefits of today's most advanced technologies. But keeping up with technology can be costly – in dollars, time, and headaches. Besides, who can afford to hire rocket scientists to run engines day-to-day? You want solutions that will give you all the benefits of the state-of-the-art –including trouble-free, set-it-and-forget-it ease of use.

Plus: with today's high gas prices, lean-burn engine operators have to handle these challenges while maximizing engine fuel economy.

## Your Problems: Solved.

Ongoing compliance?  
Cutting maintenance costs? Keeping your operation running at peak efficiency – without distractions? Count on Compliance Controls for the ideal solution: the MEC-L Lean-Burn Air-Fuel Ratio Control System.™



*Set it and forget it. It's like having an engine expert monitoring your engine, tweaking the air-fuel mix 24-7-365 – even troubleshooting your equipment.*

- Ongoing compliance assured
- Improved engine & emissions control performance
- Fail-safe troubleshooting & diagnostics
- Easy to install & use - fully automatic

Compliance  
CONTROLS™

Whoever said you can't be too rich or too lean wasn't in our business.



## THE ONE-OF-A KIND SOLUTION

- Easy to install & use
- Fail-safe troubleshooting & diagnostics
- Improved engine & emissions control system performance
- Ongoing compliance assured

The MEC-L Lean-Burn Air-Fuel Control System 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 the efficiency of both the engine and its three-way catalytic converter.

Unlike other air-fuel ratio controllers that cost about the same as the MEC-R, the MEC-R tracks *multiple factors* and regulates the air-fuel mix accordingly: engine load, actual tailpipe emissions and more. It also monitors a wide range of engine operating conditions. The result? Top performance, less maintenance and ongoing compliance assured.

*And the MEC-L works without operator intervention.*

## Dollars & Sense: A System That Pays For Itself.

Compliance assured, over the long haul. Improved engine performance, with greater fuel efficiency and reduced fuel costs. Longer, more trouble-free equipment service-life. Fail-safe troubleshooting. Fast, easy installation. Easy, user-friendly operation, with minimal

training. Network compatibility, with high-speed data transfer. Powerful smart-system features and benefits you won't find anywhere else. All with the flexibility to tailor solutions to your specific current and future wants and needs. All for about what you'd spend on other air-fuel ratio controls that deliver a whole lot less.

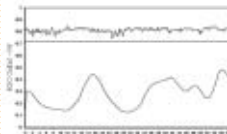
Top management, financial officers, engineers, IT and those in charge of operations can all agree: the Compliance Controls MEC-L Lean-Burn Air-Fuel Control System is simply the best value on the market, bar none – and a “must” for lean-burn engines.

### Features

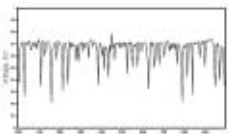
- Fast, easy, low-cost installation
- Fits virtually any lean-burn, spark-ignited, carbureted natural-gas industrial engine
- Windows® -based platform compatible with most computers  
*Software can be installed on laptop, PC, or network*
- At-a-glance on-screen dashboard graphics: LED Driver (COMM Modules) for Power, Alarm & Shutdown, Controller Communication and more
- Adaptive valve learn-software  
*Continually updates look-up tables for rapid transient response and continuous control in Open Loop mode*
- Comprehensive 44-fault diagnostics
- Data plotting for easy, accurate troubleshooting
- Alarm and shutdown dry contacts
- Closed loop, exhaust oxygen feedback control
- Variable set-point for exhaust oxygen control  
*For automatic, real-time response to varying engine loads and transients Perfect for generator-sets and other high-variance applications*
- Catalyst temperature monitoring to protect the catalyst from engine fueling malfunctions
- Two-dimensional valve positioning, based on engine speed and load  
*Maintains compliance even with critical oxygen sensor malfunction*
- Drives up to two fuel-metering valves for “V” engine configurations
- Valve control options:
  - **Smart Valve Electronic Pressure Regulator**  
*Controls all engine fuel with full authority, with differential fuel pressure control in case of air-fuel ratio control system failure*
  - **Full Authority Valve**  
*Regulates all engine fuel via system-controlled butterfly valve*
- Simple, soft-key control option
- RS-485/MODBUS® communications support for high-speed data transmission
- Utilizes CAN protocol

### Benefits

- Emissions compliance assured over varying engine speeds/loads and ambient temperatures
- Reduced fuel consumption; better fuel economy
- Reduced lube oil nitration
- Improved engine performance
  - **Minimizes air-fuel-mix related misfires and detonations**
- Longer, more trouble-free equipment life
- Fail-safe troubleshooting & diagnostics, with automatic shutdowns
  - **Eliminates operator guesswork and look-see troubleshooting**
  - **Prevents costly equipment damage and failures**
  - **Better-managed, lower maintenance costs**
- Fully automatic; no operator required in normal operation
- Minimal operator training
- Flexible network compatibility – with high-speed data transfer
- Responsive, full-service support: 24-7-365
- Software, upgrades and documentation available on disk or online



Sticking Valve



Continuous Misfire

### Comprehensive, Failsafe Engine Diagnostics

- Covering 44 critical parameters

## About Compliance Controls.

Compliance Controls was formed by two of the best-known, most trusted leaders in industrial engine emissions control and



equipment management solutions: MIRATECH

Corporation and FW Murphy. Backed by our parent companies' distribution networks, Compliance Controls focuses exclusively on delivering and supporting MEC Air-Fuel Control System solutions tailored to our customers' specific requirements.



## Visit Our Website. Or Give Us A Call.

To find out more about the MEC-L Lean-Burn Air-Fuel Control System, please visit our website: [www.compliancecontrols.com](http://www.compliancecontrols.com).

Or simply give us a call: **918-627-5050**

