

# AFR-500

## Advanced Air-Fuel Ratio Control System

- State-of-the-art air/fuel ratio control system for carbureted stoichiometric and lean-burn natural gas-fueled engines
- Fully scalable, flexible solution that can be applied in either stand-alone service or networked into existing engine/package control systems, including the Altronic DE-4000 system
- Embedded configuration and monitoring is web browser-based and platform-independent
- Incorporates modern lambda (UEGO) sensor technology as well as the capacity to access new sensors as they emerge
- Simple system installation and compatible with all existing control valves as well as the new APR-series Altronic Pressure Regulator valves
- Integrated temperature monitoring for catalytic converter monitoring
- Optional display and standardized control panel solutions available
- Suitable for use in Class I, Division 2, Group C and D hazardous area

Built on the tradition of excellence in stationary gas engine air-fuel ratio control first established by the EPC-series product line, Altronic's AFR-500 Advanced Air-Fuel Control System has been engineered and built to provide a new level of scalability, reliable service, and value to operators and users globally. This innovative new system can be deployed on both rich and lean-burn carbu-

reted engines in both single regulator (one AFR-500 module) and dual regulator configurations (using two AFR-500 modules).

The 24VDC-powered AFR-500 module (right) is designed to be DIN-rail mounted in a control panel or other suitable enclosure on both new and existing installations. In addition to on-board temperature protection, analog and digital control inputs, and the capacity to operate using a conventional lambda sensor for exhaust monitoring, a durable, wideband lambda sensor can also be used with all AFR-500 systems. Addressing specific requirements for accelerated changes in engine loads and fuel gas btu levels, the AFR-500 is engineered to offer more rapid control of existing Altronic stepper-motor based control valves, the use of the Altronic AGV-5 as a fuel control actuator, as well as full compatibility with the new APR-series fuel pressure control valves. Optional system displays and cost-effective standard panels are also available, further expanding the basket of customizable options available to users.

AFR-500 is built with simple configuration and system networking in mind. Full Ethernet and ModBus TCP compatibility provides full access to the configuration and operation of the system. Utilizing the same web browser-based approach incorporated into the DE-4000 the AFR-500 can easily be accessed from a PC or other similar device using the on-board Ethernet port. This high level of connectivity also allows for its full integration as an add-on module for a DE-4000 Next-Generation Safety Shutdown and Control System.

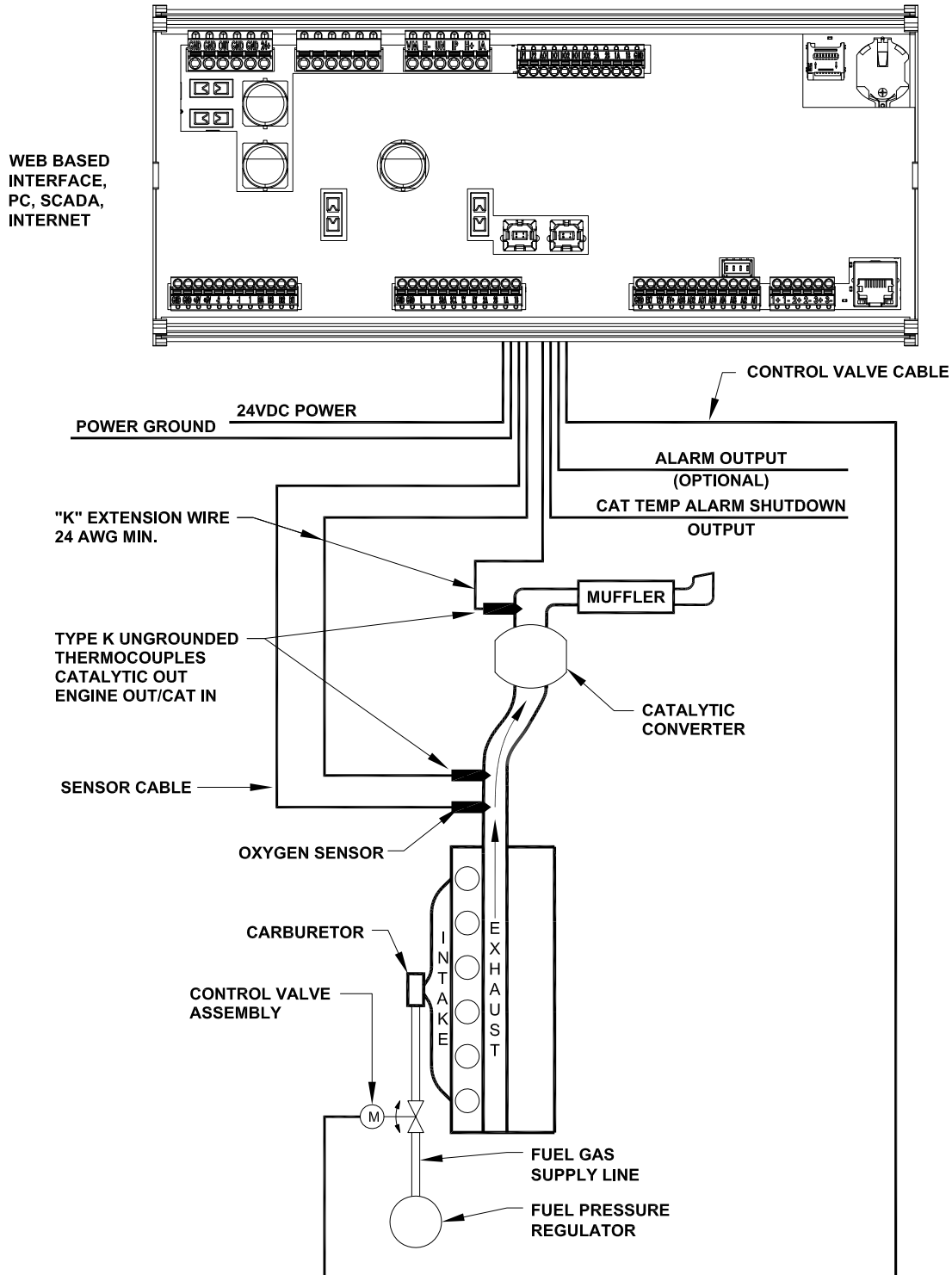
The AFR-500 system is suitable for use in Class I, Division 2, Group C and D hazardous areas.



## System Configuration

The AFR-500 is easily setup in the field through the use of an integrated, web-based configuration tool. In taking this innovative approach, the user is empowered to easily install and adjust the operation of the device without the need for complex programming software or know-how. Key values such as target O<sub>2</sub> setpoint values and catalyst temperature safety shutdown levels are simply entered and adjusted. This same level of access also allows for comprehensive monitoring of the performance of the system and the associated application, including key parameter trending and datalogging.

### AFR-500, SYSTEM DIAGRAM



## To Order

AFR-500 Control Module .....	691790-1
Control Valve, 0.75" NPT Piston-Style Stepper, <250 HP.....	690153-1
Control Valve, 1.5" NPT Piston-Style Stepper, <250 HP.....	690154-5
Control Valve, 1.5" NPT Piston-Style Stepper, <500 HP.....	690154-2
Control Valve, 1.5" NPT Piston-Style Stepper, <1000 HP.....	690154-1
Control Valve, 1.0" NPT Butterfly-Style Stepper, <500 HP.....	690210-1
Control Valve, 2.0" NPT Butterfly-Style Stepper, <1000 HP.....	690220-1
Control Valve, 2.5" NPT Butterfly-Style Stepper, <1500 HP.....	690225-1
Control Valve, 3.0" NPT Butterfly-Style Stepper, <2000 HP.....	690230-1
Control Valve, 1.0" NPT Fuel Pressure Control, <500 HP .....	690318-1

### 691808-1 Wideband Sensor Accessory Kit

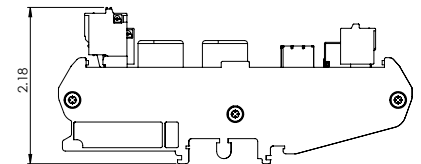
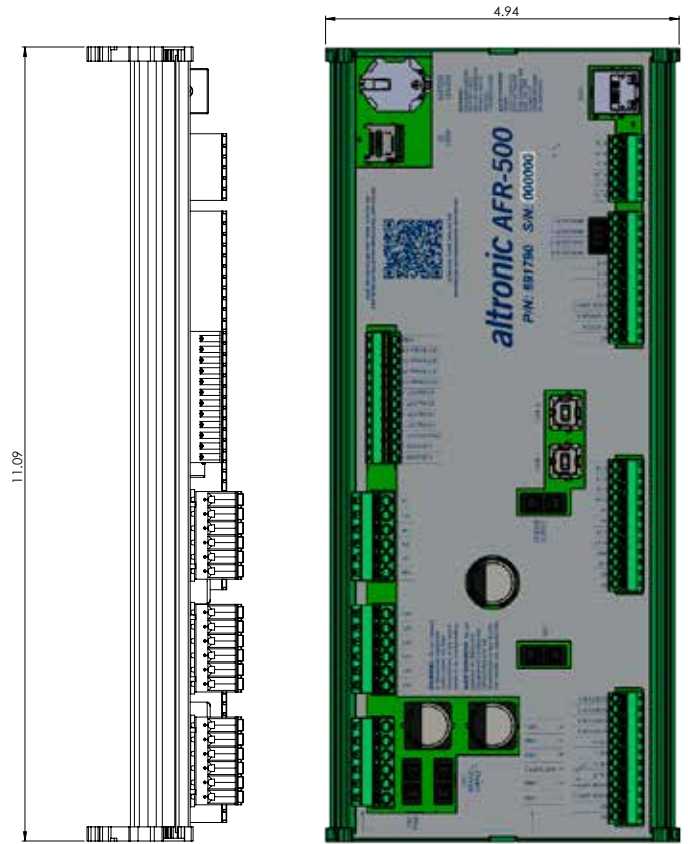
Wideband Oxygen Sensor .....	691806
Cable Assembly, Control Valve, 25 ft. ....	693005-1
Cable Assembly, Wideband Oxygen Sensor, 25 ft. ....	693226-1

### 691808-2 Wideband Sensor Accessory Kit

Wideband Oxygen Sensor.....	691806
Cable Assembly, Control Valve, 50 ft. ....	693005-2
Cable Assembly, Wideband Oxygen Sensor, 50 ft. ....	693226-2

## Specifications

<b>INPUT</b> .....	Oxygen Sensor, Wideband (1)
	Analog, 4-20mA (4)
	Thermocouple, K-style (3)
<b>OUTPUT</b> .....	Actuator Output (Stepper or AGV/APR) (1)
	Discrete Output (2 High-Side, 2 Low-Side) (4)
	Analog, 4-20mA (2)
	Analog, 1-5V (1)
<b>COMMUNICATION</b> .....	Ethernet (1)
	CanBus (1)
	RS-485 (2)
<b>POWER REQUIREMENT</b> .....	24VDC, 5 Amps
<b>MOUNTING</b> .....	Back Panel - DIN Rail
<b>TEMPERATURE</b> .....	-4°F to 158°F / -20°C to 70°C



# ALTRONIC

A Member of the HOERBIGER Group

712 Trumbull Avenue / Girard, Ohio 44420  
 (330) 545-9768 / Fax: (330) 545-9005  
 www.altronic-llc.com Email: sales@altronic-llc.com

FORM AFR-500 8-22 ©2022 Altronic, LLC