

EPC-50/50e

Air/fuel ratio control for low-horsepower carbureted natural gas-fueled engines

- Designed specifically for use on low-horsepower stoichiometric natural gas-fueled engines
- Accurate closed-loop control of air/fuel ratio for minimum engine emissions
- Precise full authority actuation using digitally-controlled valves for positive fuel control
- Modbus-based EPC terminal program and expanded I/O available to implement advanced control strategies
- Fully supports Modbus RTU communications with included PC monitoring software
- CSA certified for use in Class I, Division 2, Groups C and D hazardous areas

The Altronic EPC-50 is an air/fuel ratio controller designed for use on low-horsepower, carbureted natural gas-fueled engines. It employs microprocessor technology, allowing for a high level of sophistication in control strategy, ease of configuration and diagnostic capability. The EPC-50 and associated small engine-specific control valves are designed for use on engines operating at or near a stoichiometric air/fuel ratio and is ideally suited for application with 3-way catalytic converters. While it is designed to be mounted in the engine/compressor control panel, a NEMA 3R housing (720004-1) is also available as an alternative mounting option.

The single control output of the EPC-50 allows for its use on any engine application incorporating a single fuel gas regulator. An oxygen sensor is used in the exhaust stream to sense O₂ content, and a thermocouple input signals when proper exhaust temperature has been reached to allow for accurate sensor operation. A system fuel control valve installed in the fuel line to the carburetor is precisely adjusted by a stepper-motor under microprocessor control to maintain the correct O₂ content in the exhaust. The desired air/fuel ratio can be easily adjusted by changing the control target voltages through the sealed membrane keypad or through the use of a PC. The EPC-50 also incorporates a thermocouple input and a dedicated output for implementation of catalyst over-temperature protection. A second digital output is available for use as an alarm for diagnostics or uncontrolled operation.

The EPC-50 has an alphanumeric LCD display showing the target voltage, sensor voltage, operating temperature, stepper motor position and diagnostic information.

Power requirement is 24 (12–30) VDC, 1 amp. In remote areas, power can be provided by the Altronic 24VDC Alternator Power Package. Refer to Altronic Form ALT.



EPC-50 Exhaust Oxygen Setpoint and Gain Biasing Kit Available

Engineered to provide expanded control functionality on engines that operate under dynamic load conditions, Altronic offers a low-cost retrofit kit for new and existing EPC-50 systems. The EPC-50 Exhaust Oxygen Setpoint and Gain Biasing Kit (691306-KT) effectively converts the unit to an EPC-50e, which allows users to simply and cost-effectively implement an exhaust O₂ setpoint or control gain biasing strategy through the use of an external adaptor mounted to the EPC-50 terminal strip, an associated 5V transducer input, and a new EPC-50 Terminal Program. The Terminal Program also features a data logging function which can be used as a convenient aid when calibrating the maps used for biasing sensor targets and control gain.



Specifications

CONTROLLER	EPC-50-1
INPUTS	
Oxygen Sensor	1
Thermocouples (Type K)	2
OUTPUTS	
Fuel Valves	1
Alarm	1
POWER REQUIREMENT	10-30 Vdc, 1 Amp
MOUNTING	Back Panel
DISPLAY	Alphanumeric 2x16
TEMPERATURE	-40°F to +185°F / -40°C to +70°C
COMMUNICATIONS	ModBus RTU Protocol (RS-485)

Ordering Information

CONTROLLER
1-channel, back mount, stoichiometric EPC-50-1

CONTROL VALVES

Control Valve, 75" NPT, below 250 HP	690153-1
Control Valve, 1.5" NPT below 300 HP	690154-5
Control Valve, 1.5" NPT, below 250 HP	690154-2
Cable Assembly, Control Valve, 30 ft.	693013-1
Cable Assembly, O ₂ Sensor, 25 ft.	693006-1
Cable Assembly, O ₂ Sensor, 50 ft.	693006-2

691305-1 ACCESSORY KIT

Oxygen Sensor	610621
Cable Assembly, Control Valve, 30 ft.	693013-1
Cable Assembly, O ₂ Sensor, 25 ft.	693006-1

691305-2 ACCESSORY KIT

Oxygen Sensor	610621
Cable Assembly, Control Valve, 30 ft.	693013-1
Cable Assembly, O ₂ Sensor, 50 ft.	693006-2

NOTE: Order one Type K Thermocouple per engine, plus one for Catalyst Out

EXHAUST OXYGEN SETPOINT AND GAIN BASING KIT (EPC-50e)

Includes External Adaptor, Software CD, Screwdriver 691306-KT

ENCLOSURE (Optional)

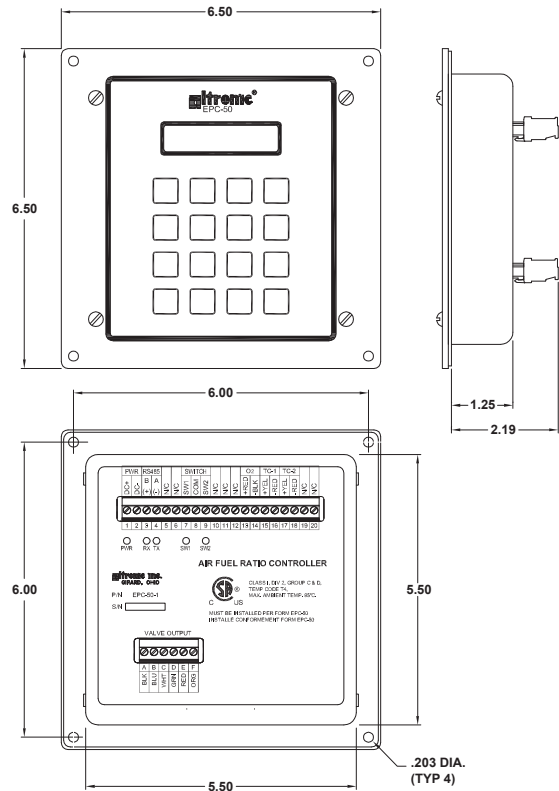
NEMA 3R 720004-1

altronic
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Display Module Dimensions



General Installation Layout

