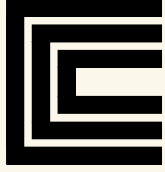


CONTINENTAL  
CONTROLS  
CORPORATION



ISO 9001:2008  
Certified

# Electronic Fuel Valve and Air-Fuel Ratio Controller GV 1 / AFR

*CSA Certification Pending*

## For Controlling Emissions of Rich Burn Gas Engines

### THE CONTINENTAL CONTROLS SOLUTION

The GV1 / AFR is one of the most simple and cost-effective Air- Fuel Ratio controllers for Natural Gas Engines. All electronics are built into the fuel valve. It does not require a separate display or electronic driver. All set up and communications will be via a notebook, a hand-held controller, or the optional mini HMI.

Often the solution has been to select a valve that was designed for another application or even another media (not necessarily for natural gas). Many times the valve was not designed for the specific flows and pressures for a specific stationary engine. This resulted in unreliable valves that offered only a limited range of control and valves that often would stick or malfunction. The GV 1 valve is designed specifically to control gaseous fuels for small to midsized engines. It is designed to control the AFR using variable pressure control based on an input from an oxygen sensor located prior to the catalyst in the engine exhaust.

It will offer full authority fuel control to allow for enough range to accommodate even low BTU field gas, bio gas, or landfill gas.

*GV1 / AFR  
with 1 1/2" pipe  
thread flanges.*



**SIMPLE AND  
COST-EFFECTIVE  
AFR CONTROL**

**FULL AUTHORITY  
FUEL CONTROL**

**EXTREMELY  
FAST ACTING**

**FAST VARIABLE  
PRESSURE CONTROL**

**SIZED FOR ENGINES  
50hp TO 500hp  
(DEPENDENT ON SUPPLY PRESSURE)**

**WORKS WITH  
TURBOCHARGED OR  
NA ENGINES**

**USE WITH EXISTING  
CARBURETOR  
OR VENTURI**

**GOOD FOR  
ALTERNATIVE FUELS  
(BIO GAS, LANDFILL GAS, FIELD GAS)**

**LOW COST**

# APPLICATIONS

## CLOSED LOOP PRESSURE CONTROL

The GV1 / AFR consists of a pressure transducer, the electronic circuit, and a gas valve operated by a voice coil actuator. The transducer measures the gas injection pressure to its set-point and adjusts the current in the voice coil actuator to regulate the gas

flow in order to maintain the pressure at its set-point. The control provides integral or “reset” control of the pressure, i.e. there is no droop in pressure as the flow increases.

Generally variable pressure control is regarded as one of the most effective techniques

for controlling air fuel ratio to a gas engine. The O<sub>2</sub> sensor feedback is used to adjust the pressure set-point to maintain the desired air to fuel ratio.

## COMMAND/ I/O

4-1vdc O<sub>2</sub> Sensor

4-20mA MAP Sensor used to adjust the O<sub>2</sub> set-point based on load

RS-232 Mod Bus

CAN Bus J-1939

## GAS SUPPLY PRESSURE

The GV 1 / AFR can operate at a maximum of 5 psi-dp pressure above turbo boost pressure. Max operating pressure is 32psi.

## OPERATING TEMPERATURE

From -40 to 185 Degrees F

## PERFORMANCE

Response < 30 ms Full Stroke

Static Accuracy .2" w.c.

## ADDITIONAL SPECIFICATIONS

10-30vdc Input Power

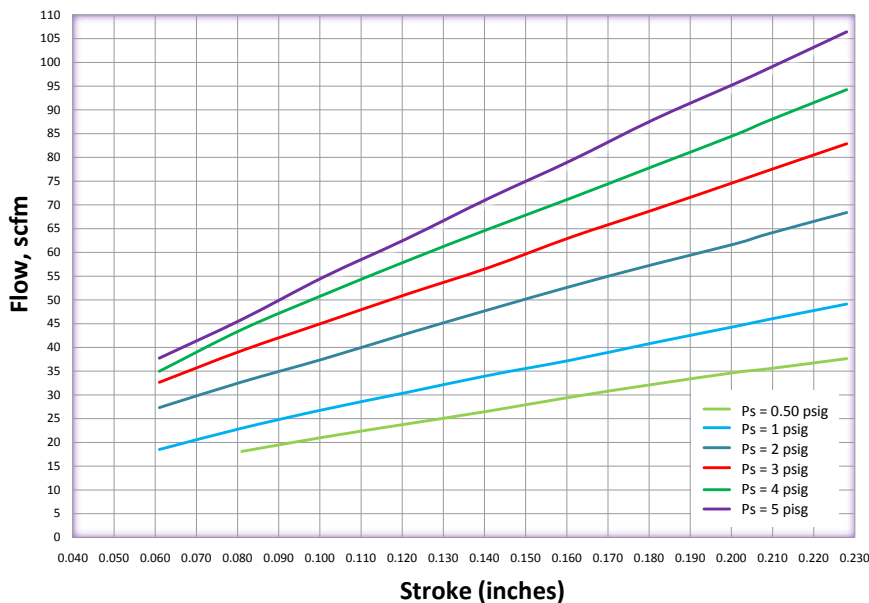
28 psig Max Turbo Boost Pressure

1/4" NPT Port for Turbo Reference Line

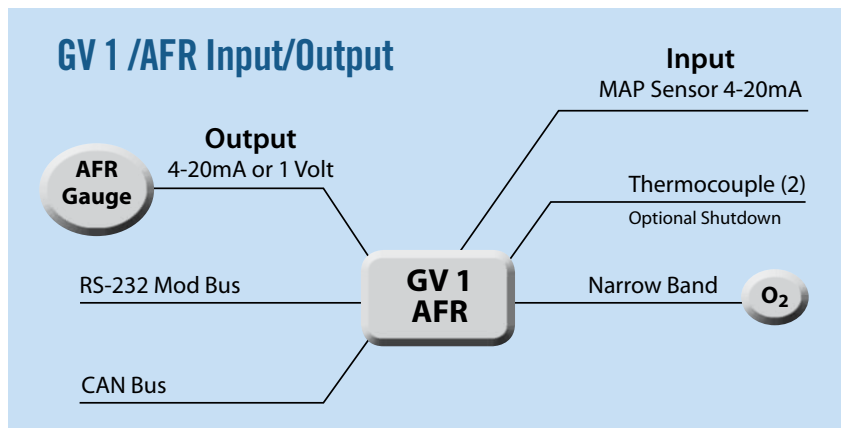
## HAZARDOUS ENVIRONMENT

Designed to be Class 1 Div 2 Compliant

## Pressure Subsonic Flow – Flow vs. Valve Stroke

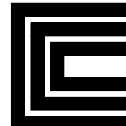


## GV 1 / AFR Input/Output



*The GV 1 / AFR is simple yet effective.*

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