GECO™ Vista

Air/Fuel Ratio Control System

Stoichiometric Gas Engine Control (GECO) designed to upgrade your gas engine to meet today's and tomorrow's emissions standards.

Applications

The GECO™ Vista is a state-of-the-art air/fuel ratio control for stoichiometric, natural gas engines. The GECO is an easy-to-install, low maintenance solution for natural gas engines. GECO's wide range of control authority quickly manages engine speed and load variations.

Optimized Fuel and Catalyst Management

GECO complements existing engine controls to provide an air/fuel ratio management system. Closed-loop exhaust oxygen feedback assures optimum catalytic efficiency and the lowest level of emissions possible. Catalyst inlet and exit temperature and pressure monitoring ensures that the catalyst will not be damaged by poor ignition, engine tuning, or fuel quality.

With downstream oxygen feedback and adaptive control, GECO will correct for fuel variations and catalyst and oxygen sensor aging, which extends tuning maintenance intervals.

Easy Installation

All components needed for installation are available through Woodward distributors. The system has a wide supply voltage range and flexible control interface options. The electronic control module accepts all control signals directly, so no additional signal interface modules or complicated wiring plans are needed. The rugged enclosure and system components provide conduit connections for clean, protected plant wiring. Plug-in terminal strip connectors allow ease of installation and make diagnostics quick and uncomplicated.

The control is also available without the enclosure, for installation in existing enclosures or cabinets.

- New color HMI. so no handheld programmer is required
- Selectable fuel valve dithering algorithm for better catalyst control
- Closed-loop, adaptive air/fuel ratio control
- Catalyst efficiency monitoring, including catalyst delta pressure
- Oxygen sensor health monitoring
- Manages wide engine speed and load variations
- Exhaust oxygen set point can be varied over load range of engine
- Fast transient response for reliable generator set performance
- Open loop failsafe operation mode continuously learns best valve positions
- Comprehensive system diagnostics
- Data communications
- Improved fuel control valve options
- New Windows-based service tool

Simple Operation, Low Maintenance

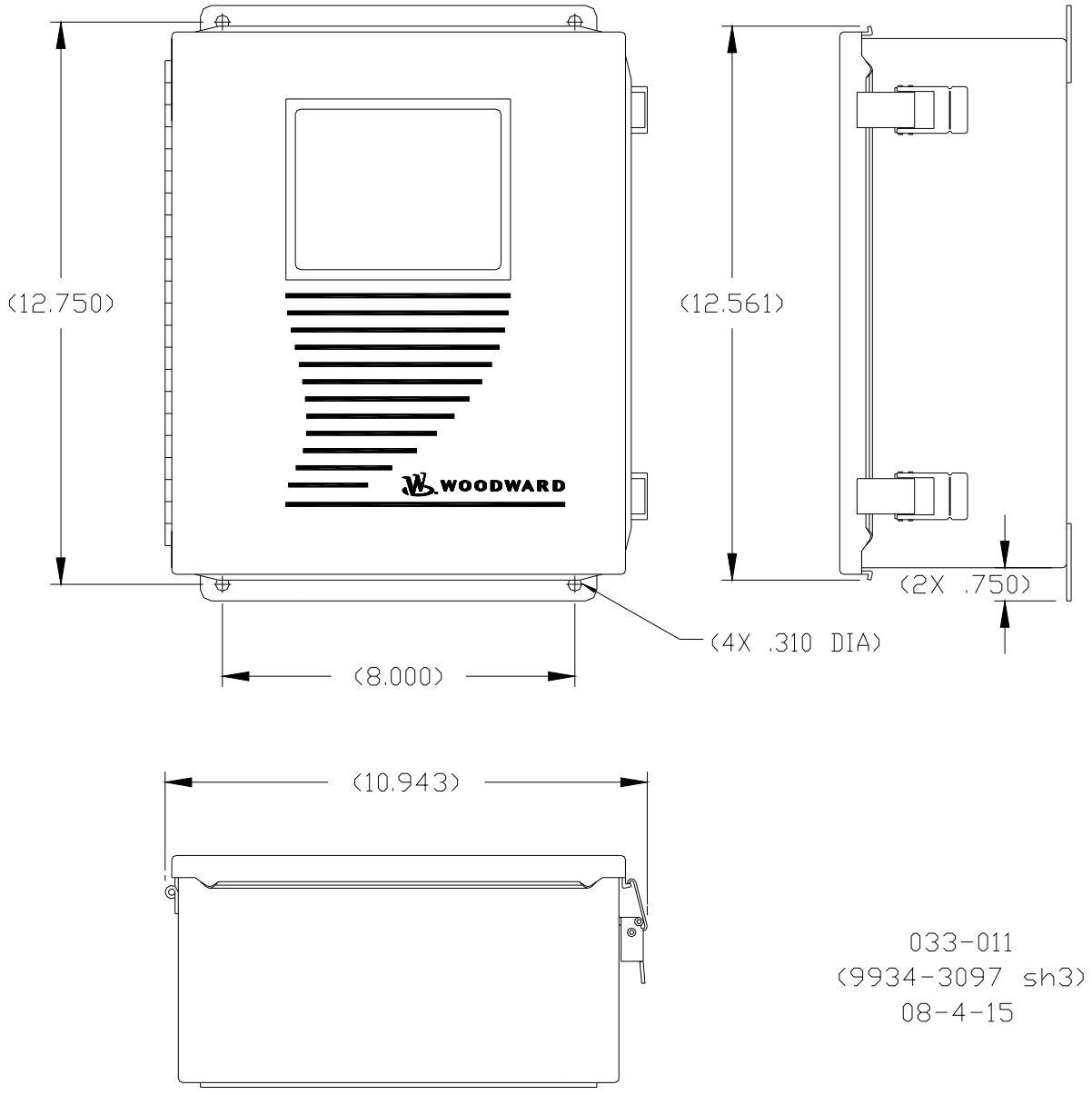
The system includes color display, PC software, which allows you to do diagnostics, monitoring and calibration. GECO's self-diagnostics pinpoint problems and provide the operator with alarm warnings and fault codes, reducing down-time for repairs. The use of Woodward's L-Series fuel trim valve offers a wider control range and better control than previous GECO versions.

The Data Transmission feature allows for transmission of control measurements and status via Modbus® * communications to a data logging system or supervisory control.

*—Modbus is a trademark of Schneider Automation Inc.

Woodward Reliability & Support

Since GECO works with original air and fuel controls, the expense and complexity of emissions compliance is minimized. Years of field development combined with Woodward's stationary engine experience have resulted in this low cost and extremely reliable control. Consistently low fuel consumption and improved engine operation ensure maximum efficiency and minimum operating costs. In addition to reduced operating costs, the value of your GECO investment is enhanced by the same strong commitment to training and service that Woodward has provided its customers for decades.



GECO Vista Outline Drawing
(Do not use for construction)

Specifications

Power Supply	
Power Supply Operating Voltage	19.2–28.8 Vdc (24 Vdc nominal)
Power Supply Rated Voltage	19.2-28.8 Vdc (Class 2)
Power Consumption	83 W maximum (application specific)
Inputs	2 unheated Zirconia exhaust oxygen sensors (0–1 Vdc), p/n 6910-315 or equivalent 1 heated Zirconia exhaust oxygen sensor (0–1 Vdc), p/n 6910-316 or equivalent 2 K-type thermocouples, p/n 1736-919 or equivalent 1 intake manifold absolute pressure sensor (0–5 Vdc; 0–3 bar absolute), p/n 6910-314 1 magnetic pickup, p/n 5430-929 or equivalent (0.20–100 Vrms; 8–10 000 Hz) 1 “G-lead” pulse from ignition system(±250 V max)
Outputs	2 PWM fuel metering valves 1 alarm relay (250 Volts @ 75 mA max non-inductive load) 1 shutdown relay (250 Volts @ 75 mA max non-inductive load)
Diagnostics	Power Supply Voltage Oxygen Sensor Health Oxygen Sensor Heater Circuits Manifold Pressure Sensor Closed-Loop Functions Catalyst Efficiency Catalyst Temperature Control Failsafe Operating Modes Pre-catalyst exhaust oxygen closed loop control on failure of post-catalyst oxygen sensor Open loop valve positioning mode on failure of pre-catalyst exhaust oxygen sensor Valve default position on failure of manifold pressure sensor
Communications	RS-232 PC Interface DB9 RS-485/Modbus Data Transmission
Technical Manual	03554

Environmental Specifications

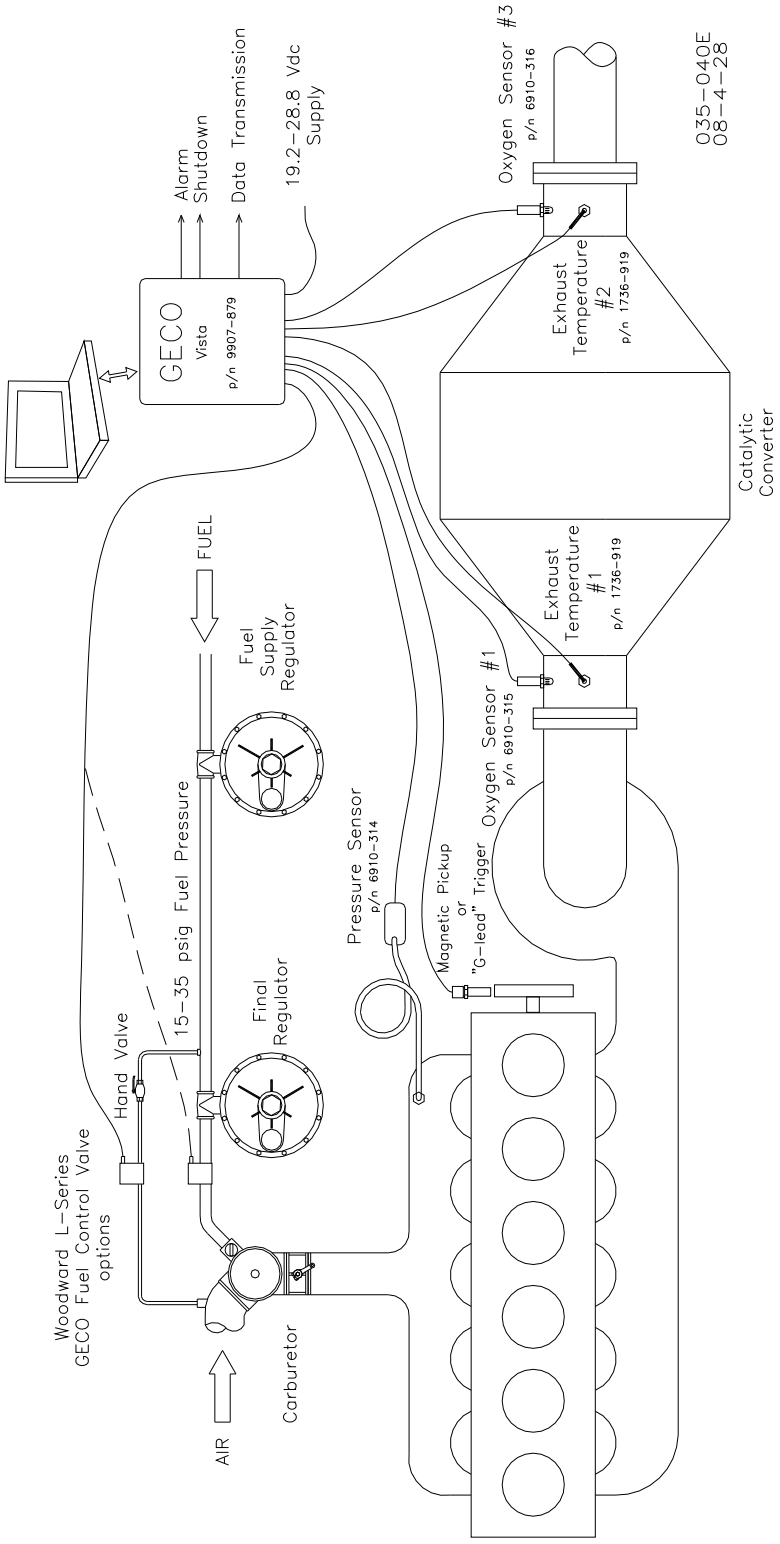
Temperature Ranges	
Ambient Operating Temperature	0 to +40 °C (+32 to +104 °F)
Storage Temperature	–40 to +105 °C (–40 to +221 °F)
Regulatory Compliance	CSA Certified & UL Listed for Class I, Division 2, Groups A, B, C, & D, T4A at 40 °C Ambient. For use in Canada and the United States
Enclosure	305 x 254 X 127 mm (12 x 10 x 5 inches) NEMA 12/13, IP55, Quick-Release Latches

Fuel Control Valve Options

New L-Series GECO Fuel Control Valves

Fast, responsive fuel control valves provide extended range of operation.

Configuration	Trim Bypass or Full-Flow
Multiple Sizes	25 mm, 30 mm, 36 mm, 43 mm, and 50 mm
Power Supply	10–32 Vdc, 32 W maximum
Supply Pressure	0–241 kPa (0–35 psig)
Regulatory Compliance	CSA Class I, Division 2, Groups A, B, C, & D, T3C CE EMC Directive 89/336/EEC



GECO Vista Schematic

WOODWARD

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Distributors & Service

Woodward has an international network of distributors and service facilities. For your nearest representative, call the Fort Collins plant or see the Worldwide Directory on our website.

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