Engine Governing System

275 Series
Integrated Pump Mounted Electric Actuator

- Mounts Directly on Bosch 'P' and 'RP 21' Fuel Injection Pumps in Place of a Mechanical Governor
- Able to Control Up to 12 Cylinder Pumps
- Maintenance Free
- Includes Manual Rack Return Mechanism
- Position Feedback Transducer & Heavy Duty Bearing Retention Options Available
- Optimum Performance for In-line Pumps

INTRODUCTION

The 275 Series Electric Actuator is designed to mount directly on Bosch 'P' and 'RP 21' Fuel Injection Pumps in place of the mechanical governor. When the 275 Series is installed on the fuel pump, an integral high performance fuel control system without external linkages or brackets results. An external fuel rack return lever is provided to manually override the actuator's control. Also provided is an adjustable internal maximum fuel limit.

The 275 Series, a second generation design that is more powerful than its predecessor, is able to control up to 12 cylinder pumps. The actuator was designed with two isolated chambers that eliminates the possibility of any magnetic particles collecting and jamming the actuator. The upper chamber, which contains oil, houses the actuator linkage and the lower chamber houses the electromagnetic components. The 275 Series typically outlasts the life of a diesel engine.

GAC has a complete line of Camshaft Bearing Retainer Kits available for the 275 Series to ensure an appropriate fit and prevent leakage. The 275 Actuator can also be installed on Bosch 'MW" and 'A' Pumps (kits sold elsewhere). For the complete listing of 275 Series' selections and kits available see TABLE 1.

SYSTEM DESCRIPTION

The actuator is an electromagnetic servo device which can be integrated into a closed loop control system. An engine control system can be described as follows. An electrical signal is generated by a magnetic speed sensor which is proportional to engine speed. This signal is sent into the electronic speed control unit which compares it to the preset engine speed setting. If the magnetic speed sensor signal and the preset engine speed setting are not equal, a change in current from the speed control unit to the actuator will change the magnetic force in the actuator. The rotation of the actuator shaft will then adjust the fuel to the engine and cause the engine speed to be equal to the preset engine speed setting. Shaft rotation is proportional to the amount of actuator current and counterbalanced by the internal spring.

Since the design has no sliding parts and is totally sealed, outstanding reliability results. A single compression spring is used to improve reliability. No maintenance is necessary.

TABLE 1 **SELECTION CHART**

MODEL	CHARACTERISTICS
ACB275C	Mil Connector/Mating Connector/24 VDC
ACB275F	Mil Connector/Feedback Sensor/12 VDC
ACB275H	Mil Connector/Lessor Return Rate Spring/24 VDC
ACE275H	Packard Connector/ Lessor Return Rate Spring/12 or 24 VDC
ACE275HD	Packard Connector/Heavy Duty Bearing Retention/24 VDC
ACE275J	Packard Connector/Greater Return Rate Spring/12 and 24 VDC
ACE275K	Packard Connector/Feedback Sensor/Heavy Duty Bearing Retention/24 VDC

KIT	CHARACTERISTICS
KT275	Adaptor Kit - Bosch "P" 3000 Pump
KT276	Adaptor Kit - Bosch "P" 7000 Pump
KT278	Adaptor Kit - Bosch RP21 Pump
KT278-1	Adaptor Kit - Bosch RP21 Pump for Maritime Applications

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EGSA Electrical Generating Systems Association

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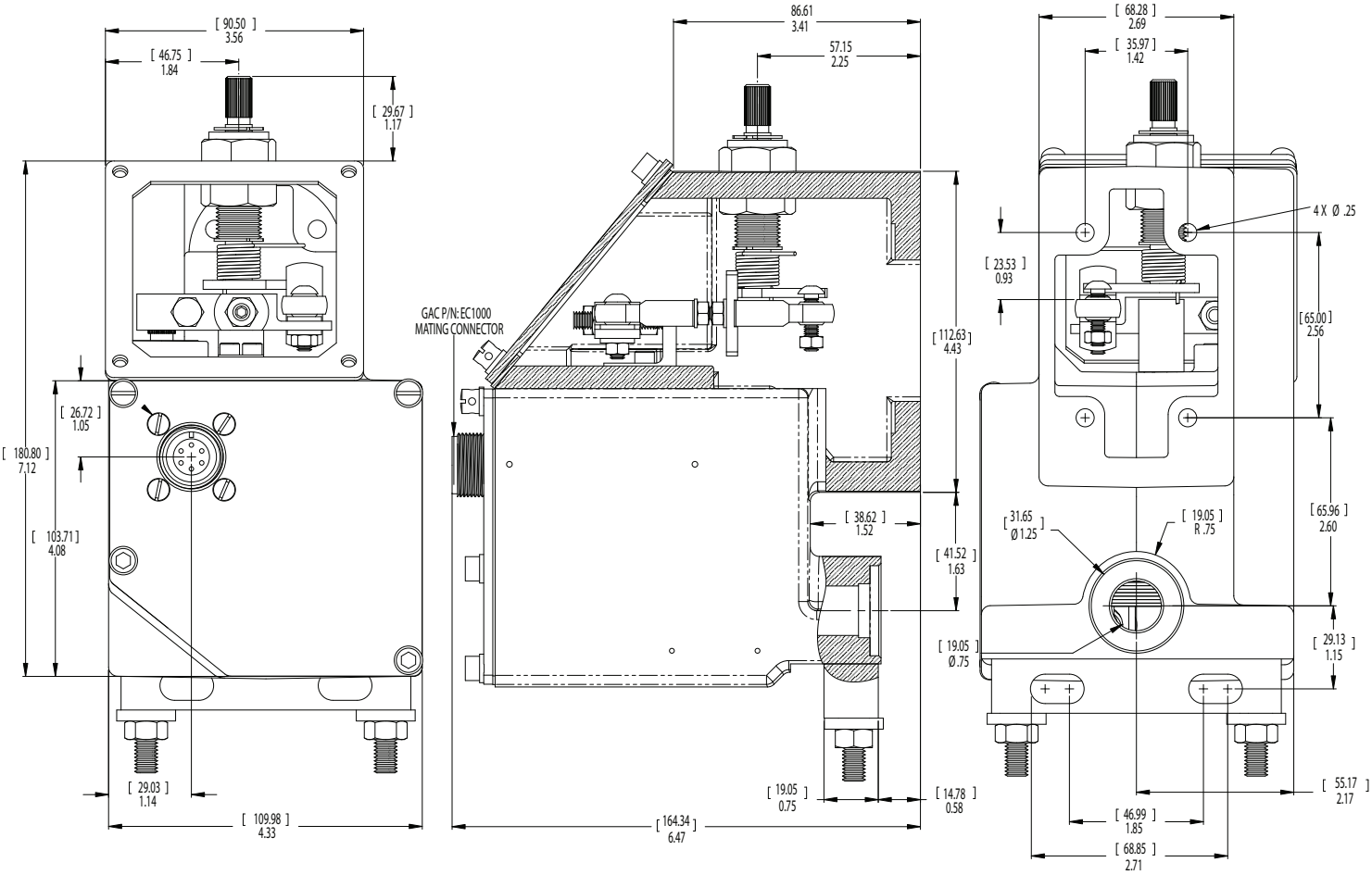
DRAWING 1 OUTLINES AND DIMENSIONS



SPECIFICATIONS

PERFORMANCE

Force.....13.2 lb. max (58.7 N)
Operating Stroke.....0.79 in. max (20mm)

POWER INPUT

Operating Voltage.....12 or 24 VDC
Normal Operating Current.....3A at 12 VDC
1.5A at 24 VDC
Maximum Current(Continuous).....9A at 12 VDC
4.5A at 24 VDC

ENVIRONMENT

Operating Temperature Range.....-40°to +185°F (-40°to -85°C)
Relative Humidity..... up to 100%
All Surface Finishes.....Fungus Proof and Corrosion Resistant

PHYSICAL

Dimensions.....See **Diagram 1.**
Weight.....11 lb. (4.9 kg)
Mounting.....Directly on **'RP 21'**, **'P' 3000** and **'P' 7000 Bosch** fuel injection pumps in place of the mechanical governor. Requires camshaft bearing retainer kit.

RELIABILITY

Testing.....100%

MATING HARDWARE

Connector - ACB.....EC1000 or EC1010
Shut off lever- ACB, ACE.....LE1400-4
Wiring Harness- ACB.....CH1203, 12 ft. (4 m)
Wiring Harness- ACE275K.....CH1515 and CH1215
Wiring Harness- ACE275.....CH1215