



Conforms to EC Directive on  
Electromagnetic Compatibility

**ISO 9001**



**ADVANTAGE SERIES**

**Model AL3000  
Linear Actuator  
0.15 Joule  
20 mm Stroke**

**Features**

- **Linear acting solenoid, position proportional to current**
- **Spring return**
- **12V and 24V versions**
- **Compatible with a variety of Speed Control Units**
- **Alternate spring selections available**

AMBAC's AL3000 provides a quick response time and wide applicability. The actuator requires no engine drive for hydraulic input. The fast-acting solenoid is completely self-contained requiring only a solid mounting surface, appropriate linkage to the fuel control and electrical connection to the Speed Control Unit. The actuator is compatible with all of AMBAC's Speed Control Units. The Model AL3000 Actuators provide a pulling force on their output shafts which may be used to control engine fuel quantity in an electric engine governor system. They are proportional solenoid actuators and therefore convert an electric current flowing through them into a mechanical force which varies proportionally in strength with the current strength. An internal return spring is provided as a fail-safe feature to insure that when the system is turned off or when battery power is lost, the

return spring forces the output shaft to its zero position which in turn can cut off fuel to the engine. Switching off power to the Actuator will shut down the engine. Furthermore, since they generally work against the force of their internal return spring, the output shaft position also varies in proportion to the current. The AL3000 Actuators move up to 20mm from their rest position; the greater the current, the larger the distance the output shaft moves.

While Speed Control Units can typically operate over a wide range of supply voltages, Actuators need to have their input current limited to some extent to prevent overheating. Therefore, the AL3000 - 12 is provided for 12Vdc battery systems and the AL3000 - 24 is provided for 24Vdc systems. These two actuators have different coil resistances and therefore require different input currents but are equivalent in terms of the force provided at their output shafts.

The actuator housing is sealed against the engine environment so fuel, oil, and steam or other water based cleaning fluids will not affect the system's operation. **No maintenance is necessary.**

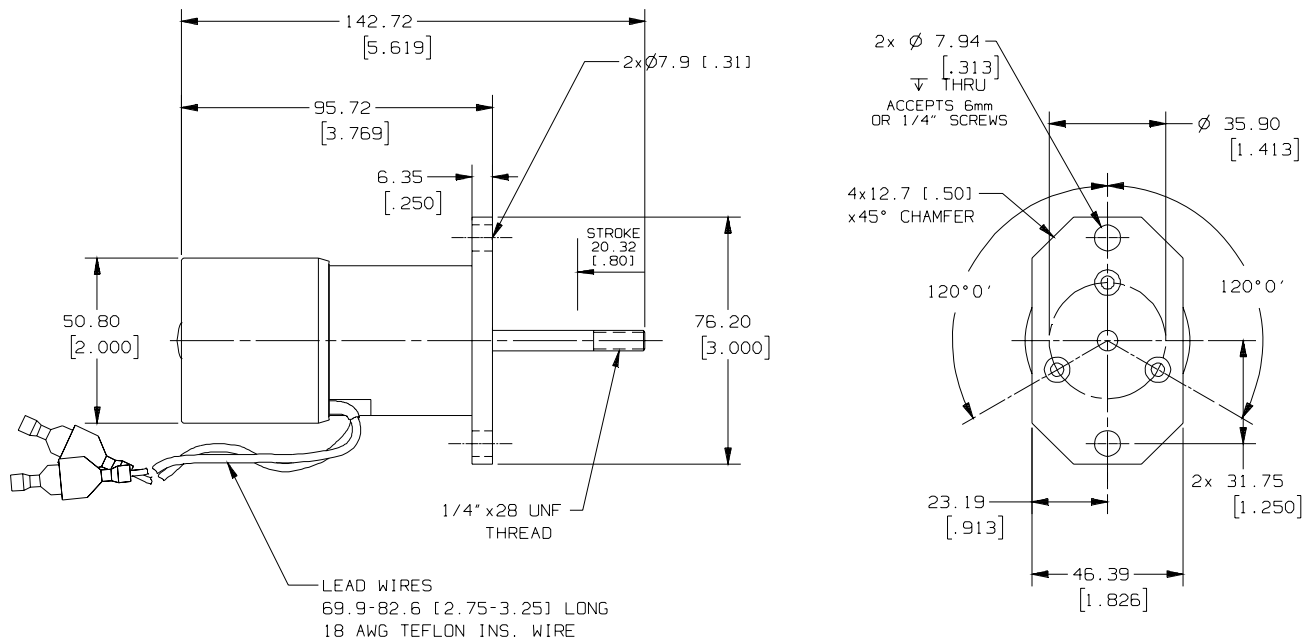


Figure 1. Outline Dimensions and Typical Connections

## Performance Specifications

<b>Performance</b>		<b>AL3000 - 12</b>	<b>AL3000 - 24</b>
Work output	----	0.15 Joule	
Continuous net force	avg	2.5 N	
Operating shaft travel	min	20 mm stroke, pulls toward actuator	
<b>Inputs</b>			
Operating voltage	nom	12 VDC	24 VDC
Continuous operating current	max	4.4 Amps	2.2 Amps
Maximum current (instantaneous)	max	7.5 Amps	3.75 Amps
Mating connector	----	Crimp lugs supplied with actuator	
<b>Environmental</b>			
Temperature range	----	-40°C<T<+93°C (-40°F<T<+200°F)	
Humidity	----	Up to 100%	
Vibration	----	15g, 10-2000Hz, Test Method 204	
Sealing	----	Fungus and corrosion resistant, waterproof	

### Ordering Information

AL300 0 - 12

Model  
Number

Variant  
0 = Standard

Operating Voltage

12 = 12 Vdc  
24 = 24 Vdc

Consult Factory for Other Options