

# L-Tech Rotary Actuator

## Integrated Engine Speed Control

### Description

The L-Tech is the newest innovation in the Woodward line of rotary actuators. Based on our standard L-Series, the workhorse of OEMs for decades, the L-Tech actuator is re-engineered to provide optimal pairing with external ECM controllers. This pairing allows the most stringent needs to be met in more and varied applications. Equipped with the full torque and upgraded environmental ratings of current L-Series actuators, it will provide the rugged performance you are used to, with the added capabilities that a paired control module can offer.

The L-Tech is an ideal actuator for diesel rack control.

It can also deliver big savings in production and field support. Since the L-Tech actuator can be economically paired with a microprocessor-based controller, it can easily optimize the operating parameters of every engine you produce. The paired system can offer advanced features for engine and vehicle controls, far exceeding the normal stand-alone actuators.

With companion control modules like the Woodward SECM 70 that utilizes our MotoHawk engine control software, you will now have a flexible system that can optimize gasoline, gaseous, and diesel fueled engines in practically any application or environment. When used in diesel fuel rack control, engine performance easily surpasses the best mechanical systems on the market in terms of droop, emissions, smoke, fuel economy, and drivability.

Besides the traditional bracket mount using external linkage, the L-Tech rotary actuator is available in a variety of mechanical configurations, including one integrated into a rotary diesel fuel pump and one integrated with a throttle body or a throttle body and mixer (product spec 03222). The externally mounted systems can be configured for clockwise or counterclockwise (standard) shaft rotation for increasing fuel.

The L-Tech actuator's high-efficiency, high-torque motor delivers 0.34 N-m (0.25 lb-ft) nominally over 60° travel range to operate fuel or air control devices. (See specifications for torque performance over the full product temperature range.)

Other L-Tech features:

- State-of-the-art shaft position accuracy
- Fast response
- Optional mounting kits for Stanadyne DB-series or Delphi DP200 & DP210 fuel injection pumps provide simple, clean and rugged installation



- Low cost engine control
- Fully integrated actuator with position sensing feedback
- Small package—greater design flexibility
- Suitable for gasoline, gaseous, and diesel fueled engines
- Externally driven by compatible controllers
- Tamper-resistant
- Non-contact, dual redundant MR-type position sensor
- 0-5 V output for actuator position indication
- Environmental rating upgraded to IP 67
- High torque with fast response time

## Applications/Functionality

With use of controller, the L-Tech actuator's functions include Isochronous Speed (50 or 60 Hz); Two- or Three Speed; Droop; Start Fuel Limiter; Load Sharing; Dual Dynamics; Adjustable Max Fuel Stop; Manifold Air Pressure Biased Fuel Limiter; Cold Start Timer; Diesel Fuel Rack Control, and Altitude / Ambient Compensation.

## Specifications

<b>Specifications</b>	
Power Supply	12/24 V system, 10 to 32 Vdc
Power Consumption	Reverse polarity protection, 32 W max
Torque	0.34 N.m (0.25 ft-lb) Nominal 0.28 N.m (0.21 lb-ft) Minimum Transient (up to 105° C) 0.20 N.m (0.15 lb-ft) Minimum Continuous (up to 105° C)
Ingress Protection	IP67 per EN 60529
Reliability	Demonstrated Life: MTTF of 20,000 hours with a confidence of >95% Reliability: The MTTF goal is 365,000 hours
Dimensions	WxHxL) 75.7 x 88.4 x 111.3 mm (2.98 x 3.48 x 4.38 in.)
Weight	425 g (15 oz)
Connector	TBD
<b>Auxiliary Inputs</b>	
I/O	Dual output 0–5 V shaft position indication
<b>Environment</b>	
Operating Temperature	–40 to +105 °C (–40 to +221 °F)
Storage Temperature	–40 to +125 °C (–40 to +257 °F)
EMC	EN61000-6-2: Immunity for Industrial Environments EN61000-6-4: Emissions for Industrial Environments SAE J1113-21: Radiated Immunity (100 V/m) SAE J1113-11: Conducted Transient Immunity – Pulse 5b, Suppressed Load Dump (45 V)
Humidity	US MIL-STD 810E, Method 507.3, Procedure III
Shock	MS1-40G 11 ms sawtooth
Vibration	Random: 0.3 G <sup>2</sup> /Hz, 10–2000 Hz (22.1 Grms) 3 h/axis Sine: 5 G 2.5 mm peak-to-peak, 5–2000 Hz, 3 h/axis, 90 min dwells, 1 octave/min
Thermal Shock	SAE J1455, Paragraph 4.1.3.2
Fluid Resistance	IP67 per EN60529
<b>Compliance</b>	
CE	Compliant with EMC Directive 89/336/EEC
Other	Compliant as a component with Machinery Directive 98/37/EC
CSA	Class I, Division 2, Groups A, B, C, D, and T3C These listings are limited only to those units bearing the CSA agency identification.



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