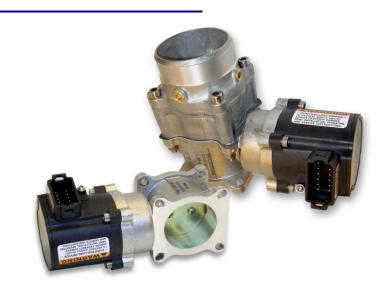


LC-50

Integrated Gas Mixer, Throttle Body, and Programmable Speed Control/Actuator

Application

The LC-50 is designed for use on gaseous fueled industrial engines between 5 and 100 kW (7 and 134 hp). The throttle and venturi sizes are between 24 and 50 mm. **Applications** include power generation, refrigeration units, pumps,



irrigation, and mobile industrial.

The mixer can be used with propane and natural gas and requires a zero pressure regulator. The throttle body incorporates the proven Woodward L-Series speed control, which operates the throttle plate. The LC-50 can be programmed via the RS-232 port of a PC/laptop to a variety of configurations, as follows:

- isochronous speed control
- auxiliary input
- adjustable ramp time
- remote speed setting
- · error relay driver

- droop
- dual dynamics
- overspeed/underspeed protection
- three speed select

Description

The LC-50 provides a building block approach to total engine management. This modular design consists of a die-cast aluminum throttle body, mixer, plus a fully programmable integrated digital speed control and bi-directional actuator.

This unique design includes a venturi style annular ring mixer with no moving parts for superior mixing. The throttle body incorporates a corrosion-protected, plated steel shaft, plate, and an optional sealed ball-bearing design for durability and long life. An internal throttle return spring is standard to close the throttle in the event of power failure.

The LC-50 modular design reduces total engine assembly cost, eliminates external linkages, lowers inventory and part number proliferation. The programmable controller offers security to your configuration.

The LC-50 is compatible with Woodward's venturi-style mixer and other brands of gas mixers using suitable adapters (see L-Series product specification 03225 for actuator details and operating parameters).

- Integrated, bi-directional actuator and programmable speed control
- Suitable for gaseous engines
- OEM configurable
- Venturi mixer has superior mixing with no moving parts
- Eliminates external linkages
- Reduces total engine assembly costs
- Optional positioner mode
- Five sizes available
- Optional air/fuel ratio trim valve
- Optional sealed ball-bearing throttle body design
- Optional external throttle position switch

Specifications

Mass/Weight 425 g (15 oz)

Engine Type 2-cycle or 4-cycle gasoline, diesel, or gaseous fuel

Actuator Torque High-efficiency torque motor delivers 0.34 N·m (0.25 lb-ft) (standard model) over 60°

travel range to operate fuel or air control

Environment

Ambient Operating Temperature -40 to +105 °C (-40 to +221 °F)

Storage Temperature -40 to +125 °C (-40 to +257 °F)

Humidity US MIL-STD 810E, Method 507.3, Procedure III US MIL-STD 810E, Method 509.3, Procedure I

Shock MS1-40G 11ms sawtooth

Vibration Random: 0.3 G²/Hz, 10-2000 Hz (22.1Grms) 3 h/axis

Sine: 5 G 2.5 mm peak-to-peak, 5-2000 Hz, 3 h/axis, 90 min dwells, 1 octave/min

Drop SAE J1211, Paragraph 4.8.3 (modified)

Thermal Shock SAE J1455, Paragraph 4.1.3.2

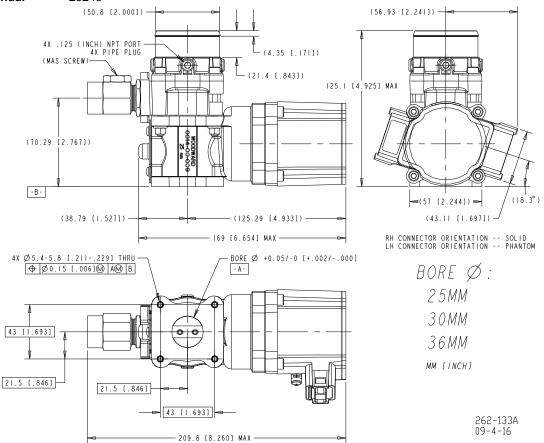
Ingress Protection IP56 per EN60529

Inlet Pressure Sealed shaft bearings: 2 bar (29 psi) gage Standard shaft bearings: 0.068 bar (1 psi) gage

Reliability and Quality Goals

The L-Series control system has a reliability target of 17 500 hours MTBF. It also has a quality goal of less than 25 PPM when measuring out-of-the-box defects. This quality goal is a target based on continuous improvement.

Technical Manual 26249



Representative Drawing of LC-50 (small-bore shown) (Do not use for construction)



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