THE NEXT GENERATION IN FUEL CONTROL

CONTINENTAL CONTROLS CORPORATION

Liquid Fuel Control Valve

For Use With PLC Controls on Gas Turbines

The ALV10 is an intelligent electronic Liquid Fuel valve designed to meet the needs of all Gas Turbine applications. It's speed and stability allow it to be used for either Power Generation or Mechanical Drive fuel control on engines that range in size from 250KW to 6MW.

The ALV 10 is a unique design with an on-board computer and internal flow meter. The valve will meter diesel, kerosene or other similar liquid fuels to a gas turbine engine. It is a closed loop servo valve.

The ALV10 measures fuel flow, and can control the acceleration of the turbine based on Pcd. It is the ideal complement to either the AGV 7 or AGV 10 for dual fuel applications.

MODEL ALV10

- Built in Turbine Flow Meter / Reports Fuel Consumption
- All Electric
- RS-485 Serial Port / Modbus
- Fail Safe Closed
- Ideal for Power Gen or Mechanical Drive
- Fast Response < 60ms

DESIGN FEATURES

Analog Flow Control
The 4-20ma Fuel Demand input signal controls the fuel flow through the valve. The fuel flow is a linear function of the fuel demand signal and can be calibrated for various turbines.

Eliminates other Components
The ALV 10 Liquid Fuel Metering Valve eliminates the need for other equipment including; acceleration limiters, governor valves, associated actuators and their hydraulic power supplies.

Embedded Acceleration Control
The ALV 10 can control the acceleration of the turbine by scheduling fuel flow vs. compressor discharge pressure (Pcd). This control provides for the optimum acceleration and deceleration of the turbine. It also off-loads overhead from the PLC which can allow for the use of a less powerful, less expensive PLC.

Turn Down Ratio
Greater than 20/1 allows for excellent flow control for starting or for maximum acceleration or load transients. It also allows the ALV 10 to work with a wide range of turbines.

Computer Interface
The RS-485 serial port provides data in a Modbus compatible format to the PLC control system. Software is also available to provide diagnostics for the valve to a laptop computer.

I/O
Inputs:
4-20ma Compressor Discharge (Pcd)
4-20ma Fuel Demand
2 Discrete Digital Inputs

Outputs:
4-20ma Position
4-20ma Fuel Flow
2 Discrete Digital Outputs
RS-485

Very Fast Response
The valve will transition from open to closed or closed to open in less than 60ms. The cycle time for the on board computer is less than 5ms.

Fail Safe
The valve is spring loaded closed. If for any reason the valve was to lose power or experience an electronic failure, the valve will close.

Closed Loop on Flow
The ALV 10 is an electronic servo valve consisting of a throttling orifice in series with a turbine flow meter. An internal microprocessor compares the measured fuel flow with the fuel demand signal and adjusts the area of the throttling valve as necessary to make the flow through the valve match the demand.

Reliable Starts
The CCC fuel valves eliminate start problems associated with inaccurate metering of fuel. The valves are ideally suited for use with PLC's and other computer control systems for gas turbine engines.

The valves are outstanding for use with turbine driven generator units. The valve's fast response enhances the generators capability to respond to step changes in load.

Materials
Annodized 6061 T6 Aluminum alloy (anodized)
440C Stainless Steel

Weight
30lbs.

Fuel Line Connections
3/4" - 16 Straight Thread Ports

Power
24VDC Supply
5 Amp max peak Power
2 Amp average

Step Response
10% to 90% of max flow < 60ms
90% to 10% < 60ms

CONTINENTAL CONTROLS CORPORATION
8845 Rehco Road
San Diego, CA 92121
Tel: 858-453-9880
Fax: 858-453-5078
www.continentalcontrols.com
mail@continentalcontrols.com