

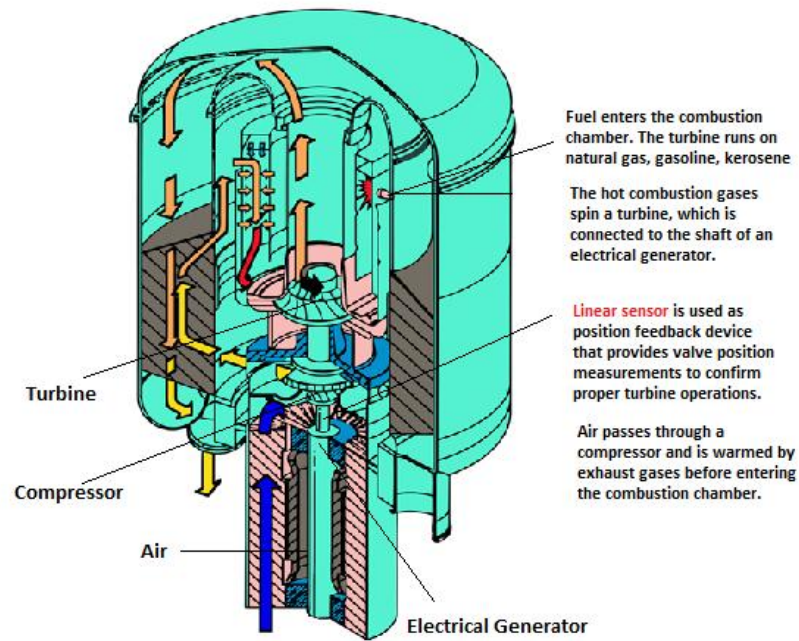
## **Application of Linear Sensor in Micro Turbines**

Micro turbines are small gas turbines used to generate electricity. Occupying a space no larger than a telephone box, they typically have power outputs in the range of 25 to 300kW. The small size of microturbines is a major advantage that allows them to be situated right at the source of electricity demand. This eliminates energy losses that usually occur when transmitting electricity from power stations.

### **Working Principle :**

The high velocity exhaust gases coming from the combustor rotate the turbine used in the micro turbine. The basic principle of working of the micro turbine is that the compressor as well as the electric generator is mounted on the same power shaft as that of the turbine. Because of this the compressor and the generator also rotate with the turbine. The generator rotates with the same speed as that of the turbine and generates the electricity. The electricity is first given to the power conditioning devices and then it is supplied to the required areas. The combustor is supplied with the fuel in the gaseous form by the gas compressor. Also fresh and compressed air is supplied to the combustor by the compressor through the recuperator. Here the recuperator plays an important role of heat exchanger. It absorbs the heat from the hot gases coming from the turbine. Then it gives this heat to the compressed air coming from the compressor. Thus the air supplied to the combustor is hot and compressed. This helps to increase the overall efficiency of the cycle.

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Linear Sensors are used for measuring the position of the operating shafts of turbine control valves and also as the position feedback device that provides valve position measurements to confirm proper turbine operations.